The Builder.

No. CCL.

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THE snow-ball gathers as it rolls. The echoes of the cry for sanatory reform are heard from many places. Those who do not feel the necessity for it, because of want of knowledge, are beginning to join in the agitation, impelled by those who do; and before long, the demand being universal will be irresistible, and men will no longer be permitted to die by thousands before their time, or suffer the wholesale waste of happiness and wealth which has so long gone on. The cry is becoming fashionable,—it is to be hoped there will not be with the much cry, "little wool,"—and the newspapers record in every column lectures on health of towns, deaths from impure air, improvements in sewerage, reports of parishes on their own abominable condition, and "grand demonstrations in favour of a sound and comprehensive sanatory bill."

Go into the provincial mechanics' institutions, and you will hear one lecturer say,—"Whilst men are interested in putting up half-a-dozen tenements where there is only space for two—whilst the population are crowded together in alleys, and lanes, and yards, without light, or air, or room, or water, or drains—whilst every sanatory law is neglected—every precaution set at nought, and all the ordinary injunctions of Providence disregarded—so long will there be high mortality, high poor-rates, and great suffering; and, unless the Government interfere, no effort of philanthropy, or exertions of individuals, can prevent, or even mitigate, the evils complained of. The dwellings of the poor, in addition to being surrounded by adverse circumstances, are often structurally bad—the walls are of insufficient thickness—the basement insufficiently elevated, and unprovided with the appliances which comfort and health require. The sites on which they are placed are frequently damp, low, marshy, and undrained; and so frail in their construction, that, were they to stand alone instead of being built in a line, they would almost certainly give way. It is not to be wondered at, therefore, that disease prevails as it does amongst them—and that fever, rheumatism, ague, and debility, thin their ranks, and convert a hale and robust population into a pale, sickly, and diseased one. The State—whose pillars and support are the labouring classes—becomes enfeebled by a physically deteriorated people; and health, the greatest blessing and bulwark of nations as of individuals, can only be preserved by attention to those external circumstances on which the physical condition of man is dependent."

And while this is being said in Southampton, another in London is shewing, that the waste of money caused by defective structural arrangements in the United Kingdom cannot be less than twenty millions sterling, the result of 20,000 deaths and 200,000 cases of unnecessary sickness,—and winding up a forcible address with such cheering anticipations as these:—"The measure announced in three successive speeches from the Throne, and brought forward in two successive Parliaments, will soon be again offered to your acceptance. How are you prepared to receive it? Happily, whatever the fate of the measure, the sanatory cause is safe: it rests upon a foundation not to be shaken; it is firmly built upon Truth, Mercy and Justice. It may be resisted for a time; but it will assuredly triumph. Justice shall take the place of the spurious charity which now wears the garb of mercy; prevention shall be substituted for publication, and economy for waste; and the hideous form of vulgar and ignorant selfishness, red with all the blood shed from the foundation of the world, and dark with the accumulated miseries of mankind, shall be trodden under foot, while the radiant form of enlightened self-interest, upheld by law and liberty, prompted by charity, and guided by justice, will reascend her recovered throne, and rule over a world, the smiling abode of health, peace, and plenty."

This delightful result, however, is still a long way off: its achievement will need many and continuous efforts,—efforts which for their own sake all are bound to assist in making. Again and again we must repeat that every person, whatever may be his station, is personally and *selfishly* interested in preserving the health not merely of his neighbours, but of all the world! If any doubt this, let them recall this one fact, that the cholera which reached England in 1831 broke out at Jessore, near Calcutta, in 1817, and destroyed 10,000 persons of all grades, through inattention to the miserable circumstances under which the *pariahs* of that province lived! Those who throw obstacles in the way of measures to give good supplies of light, pure air, and good water, to all classes, may themselves fall beneath a fever, generated by the want of these requisites in an obscure court far away from their immediate neighbourhood.

Much, as we said, has to be done: look at the recent reports from Hackney, where two children were killed by the noxious vapours from an uncovered drain or accumulation of filth; from St. Andrew's, Holborn, and George-the-Martyr, where the health of the inhabitants is seriously threatened by the state of the cesspools; from Pimlico, close to the Palace, even worse; from the wealthy parish of Marylebone, and numerous other places.

The report from the last-named parish, Marylebone, takes a very formal shape, and is an important document, shewing the industry and acumen of the committee by whom it was drawn up. It points out that no fewer than 280 streets and ways are wholly without sewers, and remonstrates in strong terms against the constitution and management of the Sewers' Commission.

As to the abominable window-tax (the tax on light, health, and morality), the report says:—"Under the head of lighting, and in connection with the extreme importance of the subject, as regards all attempts at sanatory improvement, your committee cannot but call on the vestry most strenuously to urge once more upon the consideration of the Government and the Legislature the absolute necessity, if there be any thing like sincerity on the part of the proposers of sanatory measures, of repealing that most unjust and unequal and obnoxious tax, which places a heavy penalty on the formation of all openings for the admission of light and air, the free admission of which is indispensable to the maintenance of health. So long as the window-tax continues to render the habitation of all classes, and of the poor especially, gloomy, stagnant, and impure, no attempts at a partial remedy of minor evils can be attended with success. The remedy of this crying grievance is so simple, and so completely within the power of the Legislature, that its continuance can only be regarded as a convincing proof of indifference to the most obvious and practical means of carrying out real measures of sanatory reform." In respect of intramural burial, the committee come to the self-evident conclusion that the practice is too highly detrimental to the health of the surrounding neighbourhood, to be permitted to continue under a prudent system of sanatory regulations, and they show very good reasons why, with respect to St. John's ground, in this parish, "the subject of further interment there will shortly require the most serious consideration of the vestry." In the upper portion of this ground, containing about three acres, 42,542 bodies have been placed within the last twenty-four years!

Leaving this report for a while,—the question of burial in towns daily acquires additional importance in the eyes of all unprejudiced persons,—the necessity of its prevention more evident. The recent exposures relative to Enon Chapel, and other receptacles of the sort, have opened the eyes of the public to the enormity of the abuse, and have roused the indignation of the metropolitan and provincial press. A writer in the *Bridgewater Times*, who had specially visited the place, says forcibly:—

"Since the death of the proprietor, in 1839, no fresh burial has taken place; the property has passed into other hands, and the chapel, which was once used as a place of worship, is now turned into a dancing-hall, for the delight of those who can pay sixpence for a ticket. Over this charnel-house of corruption are these revelries held; and the malignant gases which permeate through every fissure, are inspired by the crowds who have nightly visited this nest-egg of corruption. In its neighbourhood fever is always in possession, and the mortality is fearful; but who has cared, or who cares for this? The poor wretches whose poverty compels them to locate there, are far too anxious to gain a livelihood to count the cost of health at which they obtain it. Death overtakes them—they perish, and in some neighbouring burial place they balance accounts with their survivors, by rotting, and disseminating amongst them the same dangerous elements which cut *them off* before their time. And thus the game goes on: the living tread upon the dead, fill up their vacant places, and leave no blank; and, in their turn, the dead cut down the living. And who, we ask again, cares for these things? Were we to draw our conclusions from any appearance of actual reform in the system, we should answer, 'No one.' There is little evidence of a care for these things by any amendment for the better in the metropolis and the provinces. But yet, if we watch the growing movement, it evidences that there are some who care, who work and strive with perseverance and with energy to effect a reform in this particular. Sanatory reform is a popular subject. Improved sewerage, better ventilation, and facilities for bathing and washing, are the topics of the day; and valuable agents they each and all are in the great work of improvement. But what avails a better drainage, when the sewers only form a quicker vehicle for the transit of impure gases, which percolate through them from surrounding burial grounds? And what avails ventilation, when the air we breathe passes over, and is impregnated with the deadly vapours from a churchyard? What is the use, in fact, of attempting to purify the air, when the nuisance which poisons it remains, and increases daily and hourly?"

Mr. Savage Landor, in his "Pericles and Aspasia," makes satirical reference to this abuse in a passage which, although it only refers to a part of the subject, and includes an abomination of another sort, we are led to quote. One of his characters is rehearsing the tales of a travelled friend, and says,—

"But Lysicles will appear to you to have assumed a little more than the fair privileges of a traveller in relating, that the people have

so imperfect a sense of religion as to bury the dead in the temples of the gods, and the priests so avaricious as to claim money for the permission of this impiety. He told us furthermore, that he had seen a magnificent temple, built on somewhat of a Grecian model, in the interior of which there are many flat marbles, fastened with iron cramps against the walls, and serving for monuments. Continuing his discourse, he assured us that these monuments, although none are ancient, are of all forms and dimensions, as if the Thracians were resolved to waste and abolish the symmetry they had adopted; that they are inscribed in an obsolete language, so that the people whom they might animate and instruct, by recording brave and virtuous actions, pass them carelessly by, breaking off now and then a nose from a conqueror, and a wing from an agathodemon."

Our present business, however, is with health not beauty, and we leave the quaint writings of Landor for a letter by an Inspector of the City Police, setting forth an amount of illness and death in the neighbourhood of Barbican, in the city, supposed to be caused by exhalations from a burial-ground in Golden-lane, frightful to contemplate if correct. The truth of the communication has since been denied by the Guildhall Court of Sewers, the noxious gases spoken of being ascribed to the gully-hole of the sewer and the water from a steam-engine. The contradiction, however, is not by any means conclusive, and it is to be hoped that the matter will be further investigated.

This statement was forcibly dwelt on by Mr. Bond Cabbell on Monday evening last, when he took the chair at a public meeting at the Crown and Anchor Tavern, Strand, called expressly to pass resolutions in favour of a sound and comprehensive Sanatory Bill, and so to strengthen the hands of the ministers.

At this meeting, on the motion of Mr. Mackinnon, M.P., it was resolved,—"That the drainage and sewage of the metropolis are very insufficient; the cleansing of the streets exceedingly imperfect; the supply of water lamentably deficient in quantity and bad in quality; that the practice of burying the dead in the midst of the living produces great demoralization, and grossly violates the sanctity of the grave; that these, among other evils, entail enormous and unnecessary expenses upon the people, and lead to a great deterioration of health and fearful destruction of life."

And further, on the motion of Mr. Lushington, M.P., "that this meeting deplores the apathy generally evinced by the public relative to the evils referred to in the preceding resolution, as well as the absence of an uniform law which would enable the Government to exercise an efficient control over local administrative bodies; and that this meeting pledges itself to support the Government, in any efforts made by it to pass a sound and comprehensive sanatory measure."

The Sanatory Commissioners are pursuing their examinations, and, if we understand rightly, have lately received some important evidence touching the size, form, and construction of sewers,—of this, however, all in good time.

In aid of the movement, happily commenced, the "Metropolitan Health of Towns' Association" have issued the first number of a monthly "Journal of Public Health." The idea is a good one, but it will need to be carried out more efficiently than the first number promises, if it is to have much effect. Moreover, the price charged for it is too great. Under the head of "Correspondence" in this journal there is a slashing exposure of the Tower Hamlets' Commission of Sewers, which would doubtless attract attention if the Commission were not now virtually defunct. *De mortuis nil nisi bonum!*

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a meeting of the Institute, held on Monday, the 15th, Mr. C. Fowler, vice-president, in the chair, Mons. Firmin Epellet, and Major-General Howard Vyse, M.P., were elected honorary and corresponding members. Mons. Epellet, who is the architect of the department of the Pas de Calais, has recently completed the town-hall of St. Omer, which has the peculiarity of including a theatre within its walls.

In connection with Mr. Knowles' plan of the Parthenon, presented amongst other donations, Mr. Donaldson remarked, that it shewed that a joint in the pavement came under the centre of each column in the *naos*, quite contrary to modern practice. The speaker had always thought there must have been some communication between the *naos* and the *opisthodomus*, to enable the priests to get at the treasures kept there without going outside the building.

Mr. Penrose said appearances were not in favour of such a belief: there were no indications of a doorway.

Mr. C. H. Smith then gave some account of a species of trappean or porphyritic stone used in Devonshire for building purposes, and presented specimens to be added to the collection. Crediton Church, and other structures in that neighbourhood are built of it. It is of igneous formation (ranking with lava, clinkers, &c.), full of bubbles, afterwards filled with carbonate of lime: melted felspar formed the main part of the stone. Mr. Smith said it differed much in durability, and was found to be less depended on as it approached a grey colour.

Being asked whether setting it in the line of its *bed* made any difference in its durability, the reader said the line of bed could not be detected. Further, he thought in respect of lime stones, such as the oolites, Bath stone, Caen stone, &c., nothing was gained by setting them in the way of their beds: the sandstones were different. In Caen stone it was impossible for any person to say positively, merely from examination of a block, which was the direction of its bed. As to the value of this stone, the best of it was very durable, but a great difference was to be found in different specimens of it. As a general rule, the finer the grain of the oolites the more likely they were to decay: the coarse lasts longer. The best-looking work was the least likely to endure. The darker coloured Caen stone was the best.

Mr. Godwin said, the question was one of so much importance, that he would venture to refer the meeting to some experiments on Caen stone, made recently at Mr. Cubitt's, which shewed, without reference to the action of the weather in either case, that of two pieces of Caen stone the size of a brick, one, whereof the bed was parallel with the pressing surfaces, required fifty tons to crush it; while the other, wherein the bed was at right angles with the pressing surfaces, was crushed by thirty tons.*

Mr. Poynter said it was worth notice, that the mullions of the windows in Henry Seventh's chapel at Westminster, which throughout were placed contrary to the line of the bed, were in the best state of preservation.

The chairman said, this was quite compatible with Mr. Godwin's statement. The mullions of windows had little or no weight to carry,—to ensure their preservation, the main consideration was to prevent their absorbing moisture, and this was better effected by placing the bed-line of the stone vertically rather than horizontally.

It was remarked that Caen stone contains nodules of clay, and is very deceptive,—the saw often discovering vents and faults in the soundest-looking blocks. The nodules in question, even though apparently sound, are soon affected by the frost, and the block spalters.

Mr. Donaldson gave a full account of the church of S. Maria del Fiore at Florence, and a description of the design for completing the façade, submitted to the Institute by the Cavaliere Niccolo Matas. To this paper we shall probably refer again. It included an account of the wonderful dome, second in size only to that of St. Peter's, which it long preceded, erected by the scientific Brunelléschi.

In the course of the conversation which ensued, Mr. I'Anson remarked on the great interest of this building, as standing between the mediæval and revived classic buildings. In point of construction it was more perfect than St. Peter's, and a noble testimony to the skill of Brunelleschi. As regarded Cav. Matas's design, so far as he could judge, it seemed a happy adaptation.

The chairman said the design appeared creditable to the architect, and as Cav. Matas sought the opinion of the Institute, the meeting would probaby record it by a vote, which might have reference only to its general effect.

Several members objected to commit the Institute to an opinion without due consideration, and, indeed, to the expediency of giving such opinions on proposed works, even with all materials for judging before them: ultimately, however, a committee was appointed to examine the design, and report upon it to the members.

We fully agree with those who objected to this course, and hope that the committee will report that they do not consider it desirable to express any opinion upon the design. A contrary course will lead to much inconvenience, and may be productive of harm. Once establish a precedent, and a refusal to give an opinion will amount to a condemnation, while an assent in all cases will involve a great deal of useless trouble and responsibility. Moreover, it may happen that several architects have submitted designs for an intended work,—the present may be a case in point, for aught we know,—and one who should forward his *projet* to the Institute and obtain their approval, might be inferior to another, though the author of a good design, yet armed with the Bull from Grosvenor-street, be enabled to carry off the prize, and so injustice would be done. The committee, appointed to consider what opinion, if any, shall be forwarded to Florence in support of this design, cannot do better than adopt the words of a phrenological friend of ours, who, when asked by young ladies in dainty drawing-rooms to "feel their heads," and report their characters, usually replies,—"As I must either flatter your vanity or wound your feelings, without any probability of doing good in either case, and may, moreover, commit myself, young women's heads being very deceptive, I do not think it desirable to accede to your request."

* See p. 537, ante.

THE GAS MOVEMENT.

MONOPOLY PLEADS ITS OWN CAUSE QUIETLY BEFORE THE COMMONS.

A SPECIAL pleading, without much more scruple, yet without much less ingenuity, than that so often and so brilliantly displayed by the trimming barrister in defending the cause of his all-but-doomed and more than 'uneasy feeling' client at the bar of Justice, *might* have been shrewdly anticipated from the effective and convenient permission granted to gas companies by the Parliamentary 'order,' to 'tell their own story,' in the form of statements of profit and loss, and other detail, which parties asked 'what they have to say in their own defence,' are well assured 'may be used against them' on their trial,—even at the Bar of the 'Commons' both in Parliament and out of Parliament assembled. But if the immense array of figures constituting the 'abstract of returns' called for by that terror of evil-doers, Mr. Hume, was really meant by the gas-house authorities as a special pleading in their own behalf,—instead of throwing dust into the eyes of the public, far less of Mr. Hume, it runs an imminent risk of being used much more against than in favour of their own past and present course of management,—or rather of mismanagement, both of their own best interests and the interests of that public for whose behoof they act, or ought to act, as faithful trustees of certain legacies, gifts, or bounties of nature and of science long since bequeathed to them for the common good. For a more unequivocal condemnation of that course than their own returns present, no twelve honest men in a jury-box could have the heart to pronounce without that sop to a sensitive mind, even imaginary 'mitigating circumstances.' From beginning to

end, in short, these instructive returns constitute one continuous 'running commentary' on, and corroboration of, what we have so oft reiterated, both in the letter and in the spirit, namely, that, would companies only consider the history of "their own experience as a class—experience thrust on them per force indeed, but not the less instructive,"—they could scarcely fail to "be assured of the fact, that they themselves, no less than the public, would be equally and much more satisfactorily benefited by the substitution of smaller profits on lower prices, indefinitely multiplied by the endless demand to which an immense reduction in the charges yet insisted on would inevitably lead,—a demand which can only arise out of such a previous reduction of price, whether voluntary or by compulsion;" an assurance, moreover, in support of which we also appealed to "the frequent experience of Government in effecting great and wide-spread benefits to the public,—without the slightest disadvantage, nay, with positive advantage to the revenue,—by immense reductions of taxation upon articles in general use,"—or that might, could, should, or would be thus extended into *truly general* use.

But with the mere enunciation of the *general rule*,—that as surely as the price is grumblingly and reluctantly reduced, so surely are the diffusion and the 'dividends' at once and proportionately increased,—as indeed in circumstances such as these they scarcely deserve to be,—and, on the contrary, that as surely as the reduction of price is resisted, so surely are the diffusion and the dividends nipt in the bud,—we do not mean forthwith to quit this instructive phase of the present interesting and important subject: rather ought we to dwell on the details, and thus to impress the rule, if possible, on the hitherto impenetrable, and self-sacrificing even while self-seeking, dispensers, or withholders rather, of the light. For the sake of those of our readers, however, who require no such hammering of facts into the region of ideas, we shall inflict as little of the tedium of this process as we possibly can, consistently with justice to our own anticipations and to what we have just declared of the facts themselves. And the more especially so, since we do believe, after all, that now, the less hopeless or more enlightened and enterprizing of the gas directors themselves, alive to their own self-preservation and self-interest, will be at length triumphantly convinced, by their own returns, that we were right in so long insisting on a steady and rapid and immense reduction of prices below the present average: so much so, indeed, that now, at length, they will clearly see that the sooner they come down to the level of the public expectation the better for themselves, no less than for the public.

But though freely admitting the *relative* merits of this very instructive return, we cannot proceed to our task without, in the first place, formally entering our protest against one defect, and a vital one it is, in its *absolute* merits, as a fair and candid response to the public demand of a clear accounting of stewardship. With the exception of the significant glimpse afforded by a single admission of the administration of a *bonus along with the dividends* in the case of the Exeter company, and of another equally *singular* recognition of the existence of such an invention at all, along with a disclaimer of the fact, doubtless felt to be urgently advisable, that any *bonus* has ever *there* been given, namely at Halifax,—as profound a silence reigns throughout the whole of the remaining portion of the returns upon the important item of *bonuses*, as if no such convenient cloak had ever been conceived by *any* of their expert manufacturers, for covering too large profits, and for trimming and clipping the current 'dividends' of the gaseous realm into more or less unobtrusive dimensions, not so very likely to attract the admiring gaze of would-be competitors, in this golden age, when the chief good of man is a sterling "*bonus* varying from 35 to 85 per cent.," as one current advertisement incidentally has it—not a gas company's, to be sure: indeed, we will venture to say that they are not in the habit of 'revealing too much' by advertising *bonuses*. But can it indeed be possible that none have been returned simply because none have ever been given? Or, do not the one or two solitary and inadvertent exceptions prove the rule? Yet, if the rule, how can the discrepancy be at all feasibly explained? why, simply thus: The Commons called for "the rate per cent. of *dividend* to the shareholders or proprietors on their shares in each year;" but they did not call for an account of bonuses at all, and, consequently, the gas companies under parliamentary law were only acting up to their instructions, and nothing more, in volunteering nothing more than they were called upon to give. So thus it happens that full many a *bonus*, doubtless,—nay, full many an *optimus*—has been quietly left in the shadowy and obscure perspective, where it, no doubt, loves to vegetate, and fructify, and blush unseen,—too diffident, 'too truthful,' to 'reveal' itself 'too much' to any but to those happy shareholders on whom it is destined to waste its sweets.

And that we have here placed this interesting subject in its proper point of view, is sufficiently and significantly attested by one rather *striking* peculiarity in the curious correlations and contrasts displayed in these much more ostensible than real revelations of the secrets of the gas-house, namely, by the fact that in those few instances where no *bonuses can* or *will* be really called for or abstracted on any pretence from the 'dividends' of which they ought to constitute an integral or at the least a fractional portion,—instances such as those of Manchester and Salford, where the manufacture of gas is in the hands of the municipal or other public authorities, and where the profits are expended on public improvements or other public purposes,—there is a steady, strong, and honest-looking phalanx of dividends or nett profits, uniformly exhibited, which, *indeed* contrasts, in a *singular* manner, with the returns from some of the more self-seeking establishments, such as those of the metropolis.

Now, will any one believe that this is really so as it is made to appear: that by some unaccountable, nay, inconceivable, reversal of the laws of corporate or municipal, and heretofore, but too often, loose-fisted and extravagant nature on the one hand, and of private or monopolist and close-fisted self-seeking grasping on the other, those who are merely looking to the common good or the public profit, really turn out to be, par excellence, *the* grand example set before all others, not only in economical and profitable management, but in the substantial boon of a comparatively cheap article dispensed to the public whence they reap their splendid profits, also only for that public's own substantial 'bonus?' If this indeed be so, then even for this reason alone, as well as for others, the sooner our metropolitan and provincial gas manufactories pass into the hands of managers so vastly superior to those entrusted hitherto by Parliament with so public and important a charge, the better for the extensive gas consuming and the still more extensive gas-desiring portion of the community at large. But few, indeed, will yet believe that appearances are any thing but deceitful in this respect at least; and the strange anomaly thus apparent only militates the more in favour of the conclusion, that those profits, *at the least*, which appear in the municipal accounts ought also to appear in others, and would have so appeared, as we have hinted, had they not been deemed to be, like *their own idea* of the advocacy of their own editorial supporter, far 'too truthful' to be 'revealed too much.'

Yet it must not be concluded that those dividends even ostensibly reaped are in general any thing but splendid profits on the capital called up, as profits ranging upwards, from 5 per cent., through 10, to 15, 25, and even 35 per cent., cannot but be, and that too over and above the equally splendid profits expended on office-holders no less than on shareholders,—the former, proposed even by the advocates of monopoly themselves, to be most unmercifully cut down by amalgamation and concentration, or in fact, and in plain terms, by ultra-monopolization, *for the mere sake of reducing the price of gas to the public!* The alleged amount or limit of these profits, however, will appear in course of the analysis and detail on which we proposed in the outset to enter; but, in order to do justice to our subject, we find we must make room for it, and other matters of more or less moment, in another article.

Glass Trade.—The glass trade, which forms an important branch in the manufactures of the Tyne, is at present very dull. The large house of Swinburne and Co., at South Shields, have reduced their men to short time, and have discharged nearly all their labourers.

TRURO NEW HALLS AND MARKET.

On Friday in the week before last the new halls and market, erected from the designs of Mr. Christopher Eales, of London, were opened. The ground occupied is an irregular parallelogram, on the south side of Boscawen-street, containing an area of about 3,000 square yards, the whole of which has been embraced in the plan, which is arranged in three divisions.

The *northern building*, the principal construction, has a frontage towards Boscawen-street of about 90 feet in width and about 50 feet in height. The façade is in the modern Italian style, and partakes of the *palazzo* character. It is executed in granite, from the Carn Brea quarries, and has a rusticated basement with five openings in it, the quoins and arches being vermiculated. The basement is surmounted by a continued cornice of the Doric order, the frieze and soffit being charged with triglyphs and modillions. From this cornice the principal story rises, having five windows therein, with suitable dressings, surmounted by tympana, three of them being angular, and the two intermediate circular. Beneath the windows panels are formed between consoles under the sills. The rusticated quoins of the building are continued up to a *cornicione* surmounting the whole frontage, 4 feet in depth, and having a projection of 3 feet 6 inches, supported by deeply-moulded consoles, with panelled frieze and sunk soffit between. Above the central window rises a small ornamental dial-turret, to be terminated with a finial and vane.

The three central openings in the basement lead to a vestibule, 90 feet by 40 feet, which is divided into compartments by granite *antæ*.

In the centre, on each side of this vestibule, is a staircase of dressed granite, leading to a spacious corridor of communication on the principal story, in the front of which is the council-hall, 40 feet long by 30 feet in width, and 22 feet in height. Adjoining are a committee-room, town-clerk's office, &c.

Opposite to the council-hall is the great court, 50 feet long by 36 feet wide, and 25 feet in height. It is lighted by six windows, and fitted up as a judicial court. It is wainscotted round to the height of the windows; the walls above are divided by pilasters into compartments, and there is a cornice with enriched trusses beneath the coffered ceiling. At the east end of the façade is the police station.

The façade of the *south building*, which is towards the quay, is about 105 feet in length, and executed in dressed granite, with a centre and two wings, the former 40 feet in height. The principal story is of good dimensions; the centre has five circular-headed windows, the centre being a triplet, and the whole surrounded by a cavetto, with sunk angular rustic jambs and arches. This building comprises, on the ground story, a fish-market, 60 feet by 30.

In the *central area*, between the north and south buildings, is placed the market. It is divided in width into three spaces, by iron columns supporting the roofs, the centre roof being 25 feet in height, and lighted by a range of glazed sashes on each side. The side roofs also have lights, and additional light is obtained from windows in the east and west walls. The area is arranged with four double rows of stalls, affording accommodation for eighty-six butchers; with others at the sides for poultry, &c. There is also a corn exchange, together with weigh-house, furnace-room, and other conveniences for the use of those attending the markets. The whole, with the exception of the fish and pig markets, is paved throughout with slabs of Delabole slate. According to the *Cornwall Royal Gazette*, the whole building is substantially erected, and well adapted to the site. The first stone was laid on the 20th of January, 1846. The contractor was Mr. Joseph Pryor, of Helston.

Mr. Eales was the architect of the townhall and markets in the neighbouring town of St. Anstell, as well as of several residences in the neighbourhood.

Lubricating Machinery.—Mr. Carter, of Oldham, has secured a patent for a new system of lubrication, by which a certain portion of oil, or other fluid, is supplied from a revolving flask to the axles or shafts in machinery, between any certain number of revolutions—such as one in 5,000.

OF A NEW STYLE IN ARCHITECTURE.

THE ARCHITECTURAL ASSOCIATION.

At a meeting of the association on Friday, the 5th instant, a paper "On a new Style in Architecture" was read, of which we give the following portion :*—The ancient style of Roman architecture was revived with the arts of painting and of sculpture, receiving such additions as were demanded by a state of increased luxury. There is no doubt that for its ascendancy the classic style was greatly indebted to its sculpture, from which the great artists of the sixteenth century learnt the elements of their arts, and naturally extended their admiration and study to the relics of coeval architecture. The influence of such examples soon became felt throughout Europe. In Britain, which seems always to have signalised itself by economy in matters of art, brick supplied the place of stone, oftentimes in edifices of much importance. It must be confessed that the mixture of the two materials was not altogether unfavourable to the results. The Palladian school adorned this country with many admirable buildings, but gave place to the school which formed the most vapid productions ever dignified by the name of architecture. A rage arose for what was called pure Greek art, by men who merely copied the dimensions of ruined temples, and were utterly ignorant of the spirit of artists. If the common sense of mankind had allowed it, they would have covered the land with hypœthral dwellings, for windows were not so much in the style. To be in style they abandoned their material of brick as a surface; they stuccoed and painted their abortions to imitate blocks of stone, because Greek temples were marble. Though they used paint on their elevations, they never thence attempted to make a beauty: it had not been proved to their satisfaction the Greeks had a gift for polychromic decoration. The Greeks, in their opinion, were too pure for colour. If it had been practicable, they would have had their works black-lined drawings in the air, so droll an opinion had they of Greek refinement. This race of blockheads is not extinct; the surveyors of this day have the same itch for copying, in spite of the introduction of cast iron. They copy interminably, and scarcely one attempt has been made to strike out any beauty of which the material may be susceptible. Some copy classic, and others gothic; they deride the abuses of each other's styles, and are equally ignorant.

> "So one fool lolls his tongue out at another,
> And shakes his empty noddle at his brother."

They are equally ignorant of the very rudiments of composition,—that art by which masses are balanced without uniformity,—and they are justly the targets for the ridicule of painters and sculptors. A column, ready made, is built as a monument, because composition requires ability; the column is surmounted by the abacus, even a Corinthian, though there be no architrave for it to sustain, or with which it is to harmonise; thus the abacus becomes useless, and, seen diagonally, top-heavy and unmeaning. The ancient cornices, which are always placed on modern dwellings, are so unsuited to the dimensions of our brick walls, that, to prevent them from falling off, we must balance their weight by building an attic or a balustrade upon them, or we must resort to clumsy expedients of construction to tie them down with iron rods. Thus reviewing some of the absurdities committed in the name of style, considering the requirements of our materials, brick and iron,—considering that the architect is degraded by the importance of style, that he sees no beauty in any thing not according to precedent,—I cannot but wish that some man of genius should arise and produce a system less conventional, and more adapted to our wants. If this could be obtained, we should not find men tolerated in calling themselves architects whose pretensions to the title consist in the possession of certain books. We should more frequently find men who, when they have acquired the knowledge of styles, consider that they are but scholars who have just mastered the grammar of their art, and then we should also find that men of general talent and education could appreciate architectural beauty, when their opinion of architectural ugliness could not be swamped by the assertion, that the ugliness is in style. How absurd is the whim of one man for making the two sides of his design uniform to the minutest particle; when convenience requires a modification, how ludicrous his struggles for monotony! Yet let us not laugh at him sooner than his rival, who declares that his style admits of any thing, and does his best in his works to illustrate the meaning of "higgledy-piggledy." The strongest argument to be urged against the neglect of style is that founded on the association of ideas; but this is an argument of more force in imagination than in reality. It is true that, contemplating the architectural glories of ancient Athens or Rome, the poetic mind may feel that Socrates has hallowed the one place or Cicero the other, and be in enchantment at the remembrance of departed genius. Let us now suppose a case in which this argument will receive its most favourable illustration;—suppose a man in solitude, among the ruins of Athens, to be one who from learning and natural sensibility is capable of thought suited to such a place,—to be at the time even under the influence of those glorious ideas that make the poetry of Byron immortal: such a man might fold his arms and say within himself, "These are the ruins of that city whose people murdered Socrates,—here looking at that glorious sun which now I see, of wicked men he took the poisoned bowl." Here he might sigh; but if that sigh were answered from behind some broken columns, no doubt his emotion would then depend upon the voice; it might be that it would not be such as to dispel the sadness that does not offend. But if the voice, instead of harmonizing with the melancholy of the scene, were clamorous for beef-steaks, the veriest clown must know the poet's dream is gone, and his mind occupied by indignation, or, perhaps, a disposition to laughter. Then, if the association of ideas can be thus destroyed, we are not to be told that the argument for it is effectual when applied to edifices making but a second-hand appeal to the imagination. When we see coat-tails disappear in the entrance to Exeter Hall, are we dunces because we do not think of the Eleusinian mysteries, or because when we hear a speaker we are not reminded of Demosthenes by the pure Greek plaster of Paris honeysuckle above his head? Familiarity (if nothing else) will make us callous to these appeals from the architects.

If it be not presumptuous, I would mention some of the things that, in my opinion, should be used in the promotion of any style:—a fitness of design for the purposes of the building, to express which perfectly recourse must be had to sculpture or painting; geometrical proportions, for which we derive an admiration from natural objects; a constant endeavour to take advantage of the requirements of convenience and peculiarities of situation, which would often give to such an artist hints for the production of original beauty; decoration instead of concealment of constructive parts:—thus, when requisite to use iron beams or supports, it should be considered better to make them in themselves agreeable objects, than to encase them and make them wretched attempts at the expense of classic art. I would prefer the appearance of brickwork to that of stucco; but, wherever necessary to use that externally which needs the preserving quality of paint, I would thence endeavour to produce the pleasing by the means of paint; certainly it would not content me to adopt the colour now used, and which (so some say) is intended to represent freestone; neither, since iron work must be painted, do I think that the lead colour which satisfies the ambition of our architects, ought so to satisfy it:—a total disregard of, and contempt for the notion that calling monotony "classic" will make it charm, or that by calling a lopsided or straggling building "Christian" or "Gothic," it will be in any way improved. Study of all styles and mastery of composition are essential to the man who would produce an original architecture more suited to our materials than the ancient styles. Whatever degree of credit we afford to him who adapts ancient styles, our utmost praise will belong to the producer,—there is no fear that his originality will be mistaken for that of ignorance. Be it ours, even when we see faults in his design, to applaud his endeavours and to encourage him in his progress.

* We are glad to learn that the society is progressing favourably, and has now eighty members. A class for the study of ornament has been formed among the junior members. In reply to some correspondents, inquirers should address the secretary at Lyon's-inn-hall, Strand.

THE THOROUGH IMPROVEMENT OF LONDON.

Sir,—From the statements contained in your leading article of the 30th ult., I greatly fear that *another* opportunity for the improvement of the metropolis is about to be irretrievably lost, as it most assuredly will be, if the suggestions of the "Metropolitan Improvement Commission" (which would be more properly termed the "Metropolitan Spoliation Commission") are carried out; and I therefore wish once more to raise a voice against any further perseverance in such an absurd, costly, and piecemeal system as at present obtains.

The necessity for a new grand line of thoroughfare, from the west end of Cheapside to the east end of Queen-street or Long Acre, is generally admitted, as such a line would tend very materially to relieve both Holborn and Newgate-street, and the Strand and Fleet-street; but such a line, to be effective, must be direct, and, to be carried out at least cost, must be done by one directing body, and in the shortest possible time. But there is no possibility of these requisites being complied with if the street is to be formed conjointly by the commission and the corporation, as proposed.

That it will not be *direct*, you, Mr. Editor, have shewn; and the cost must of necessity be greater if carried out by *two* public bodies than if it were (as it ought to be) under the control of one efficient commission; and then, as to the time in which it is to be completed, if we may judge from the time that has been spent in merely *talking* about this projected new street (which you state at thirteen years), I will not venture to say that any of the present generation will live to make use of what they will have paid for.

The cost of forming an important thoroughfare such as this, would be, if properly executed, very materially reduced, if not altogether liquidated, by the increased value which would be obtained for the frontages; and, if speedily completed, the loss of rent during the time it was in operation would be very small, in comparison with what it must be at Victoria-street, *alias* New Farringdon-street, *et hoc genus omne*.

In your notice of this subject, Mr. Editor, you speak of Lincoln's Inn and Fields as "forbidden ground." I certainly cannot concur in that idea; and a properly-constituted "Improvement Commission" would not surely "knock under," if I may use the expression, to any public or private body, especially if such a course would injure *or obstruct* any public improvement.

Why, I would ask, is not the erection of *all the courts of law* in the vicinity of the inns of court and the new street (as proposed by Mr. Barry), and the widening of the Chancery-lane end of Fleet-street, included in the proposed plan?

But, however the proposed new street may be carried out, it will have the effect of further burthening Cheapside, if that is possible, unless, at the same time, another direct street is formed from London-bridge to St. Paul's. But the reply would be, the Improvement Commission must not venture within a small space in the heart of the metropolis, called the "City," as that is "forbidden ground." Again, therefore, this must be left to the corporation; and what will they do? Nothing, or worse than nothing! And so things go on, and ever will, unless the "thorough improvement of the *whole* of the metropolis, upon one specific and well-digested plan" (without respect of persons, as benchers, aldermen, common councillors, &c. &c.), is intrusted to one efficient Improvement Commission, with ample powers, so as to obviate the necessity and consequent delay and cost of applications to Parliament in each case; and then Southwark, Lambeth, and the outskirts will receive a due share of attention, as well as the more wealthy quarters of the city and west-end.

Hoping, with you, for a better state of things, I remain, Sir, &c.,

A Londoner.

City Union Workhouse Competition.—We understand that fifty-one competitors have sent in plans for the City Union Workhouse. The designs are placed in a room in the Auction Mart by the Bank, and the decision will probably be arrived at in the beginning of the week.

OPENING OF THE SOCIETY OF ARTS.

HISTORY OF BOOKBINDING.

Nov. 10.—Mr. Thos. Webster, F.R.S., in the chair. The secretary read an address on the opening of this the 94th session of the society, and stated, that the council had great pleasure in congratulating the members on the prosperity of the society and its prospects of increasing usefulness. It referred to the changes recently introduced into the constitution of the society and the great general benefits which had resulted therefrom. It next alluded to the suggestion which had been made at an early period by H.R.H. the President, indicating one direction in which the arts and manufactures of England admitted of advancement, and eminently required improvement and the success which had attended the offering of large premiums for the production of improved specimens, uniting decorative art with manufacturing skill, and the ready sale which manufacturers found for their improved productions. It then referred to the efforts of the past session to establish an annual exhibition of British manufactures, and announced the intention of the council to open the second exhibition in February or the beginning of March next, after which, in June, the exhibition of the paintings by W. Mulready, R.A., is to take place. The address concluded by stating that H.M. the Queen had, at the request of the Prince Consort, granted to the society a Royal Charter of Incorporation, bearing date 10th of June last.

Mr. J. Cundall read a paper "On Ornamental Art as applied to Ancient and Modern Bookbinding." He commenced by stating, that the earliest records of bookbinding prove that the art has been practised for nearly 2,000 years, previous to which time books were written on scrolls of parchment. Some inventive genius, however, to whom the Athenians erected a statue, at length found out a means of binding books with glue. The rolls of vellum, &c., were cut into sheets of two and four leaves, and were then stitched somewhat as at the present day. Then came the necessity for a covering. The first book-covers appear to have been made of wood, probably merely plain oaken boards, which were afterwards succeeded by valuable carved oak bindings; these were followed by boards covered with vellum or leather, and specimens of such of great antiquity still exist. The Romans carried the art of bookbinding to a considerable perfection, and some of their public officers had books called Diptycks, in which their acts were written. An old writer says, that about the Christian era the books of the Romans were covered with red, yellow, green, and purple leather, and decorated with silver and gold. In the thirteenth century some of the Gospels, Missals, and other service books for the use of the Greek and Roman churches, were covered in gold and silver; some were also enamelled and enriched with precious stones and pearls of great value. In the fifteenth century, when art was universal, such men as Albert Durer, Raffaelle, and Giulio Romano decorated books. The use of calf and morocco binding seems to have followed the introduction of printing, and there are many printed books bound in calf with oaken boards, of about the fifteenth and beginning of the sixteenth centuries; these are mostly stamped with gold and blind tools. The earliest of these tools generally represent figures, such as Christ, St. Paul, coats of arms, &c., according to the contents of the book.

In the reign of Henry the Eighth, about 1538, Grafton the printer undertook to print the great Bible, for which purpose he went to Paris, there not being sufficient men or types in England; he had not, however, proceeded far before he was stopped in the progress of this book, when he returned to England, bringing with him presses, type, printers, and bookbinders, and finished the work in 1539. Henry the Eighth had many books bound in velvet, with gold bosses and ornaments, and in his reign the stamping of tools in gold appears to have been introduced. In the reign of Queen Elizabeth some exquisite bindings were done by embroidery; the queen herself used to work the covers with gold and silver thread, spangles, &c. Count Grolier seems to have been a great patron of the art on the continent, and all his books were bound in smooth morocco or calf, ornamented with gold. The style of the books of Maioli was very similar to that of Grolier or those of Diana of Poictiers, the specimens done for her being among the finest ever produced, and were no doubt designed by Petit Bernard. Roger Paine was the first Englishman who produced a really good binding, and some of his best works, such as French romances, were powdered with the fleur-de-lis. His books on chivalry had suitable ornaments; on poetical works he used a simple lyre, and carried the emblematical style of binding as far as emblems ought to be used. The following bill of his for binding a work is a curiosity, and shews how moderately he charged:—

Vanerii prodium Rusticum Parisiis, MDCCLXXIV.

Bound in the very best manner, in the finest green morocco, the back lined with red morocco; fine drawing-paper, and very neat morocco joints inside; their was a few leaves staind at the foredge, which is washed and cleaned	0	0	6
The subject of the book being Rusticum, I have ventured to putt the Vine Wreath on it. I hope I have not bound it in too rich a manner for the Book: it takes up a great deal of time do these vine wreaths. I guess within time I am certain of measuring and working the different and various small tools required to fill up the vine wreath, that it takes very near three days work in finishing the two sides only of the book; but I wished to do my best for the work, and at the same time I cannot expect to charge a full and proper price for the work, and hope that the price will not only be found reasonable but cheap	0	18	6

The author, after alluding to the numerous specimens of modern bindings which have of late been produced to the public, and regretting their want of originality, concluded by urging the necessity of attempting something original, and suitable to the advancing and improving taste of the time. Then we may hope, that ere long ornamental art in bookbinding will be wedded to our present perfect execution, and that the nineteenth century will be able, like the fifteenth century, to boast of a style of its own.

Mr. Henry Cole, assistant keeper of the Public Records, exhibited a number of very curious and beautiful specimens, among which was one of Henry the Seventh's time, containing the deeds relating to Henry the Seventh's Chapel at Westminster, and in which the monks undertook to pray for the soul of the king, as its founder, as long as the world is.

DISREGARD OF CITY ANTIQUITIES.

At a meeting of the British Archæological Association on the 12th instant, amongst various interesting matters brought forward, Mr. Roach Smith announced the discovery of Roman remains in Lad-lane, opposite Pickford's warehouse, which, he said, were connected with a building of considerable extent, which occupied the site of that portion of the street, a part of Wood-street and St. Michael's Church. The excavations recently carried on had cut through about 30 feet of a tesselated pavement, but the apathy and something worse which existed in the court of common council towards the antiquities of the city, rendered such discoveries comparatively useless. On a former occasion he had hoped to have preserved for a museum, which, it had been proclaimed, was to have been established in the Guildhall, an interesting fragment of coloured tesselated pavement found near St. Michael's Church; but, although he obtained the ready co-operation of the town-clerk and the comptroller, their combined efforts were not sufficient to resist a counteracting influence. It would seem it could not be removed to the Guildhall without some further sanction, for upon the matter being brought before a gentleman of power in the Board of City Improvements, he declined going to inspect the pavement, and summarily ordered it to be brought before him, in compliance with which fiat the pavement was shattered in a thousand pieces.

Mr. Price gave an account of discoveries made a few years since upon this site, and said he himself witnessed the destruction of a curious pavement opposite that under consideration. He stood by and saw it wantonly cut to pieces, and he did not hesitate to say that the reason alleged for its rapid destruction was to prevent, as much as possible, the researches of Mr. Roach Smith.

The chairman (Mr. Pettigrew) said it was perfectly disgusting to hear of these continued acts of destruction, especially while attempts were being made in certain quarters, to exhibit on the part of the city authorities a show of feeling for the works of art in the ancient city, which feeling they evidently did not possess. There was also an everlasting talk about *the City Museum*, while the objects which alone could form such an institution, were ruthlessly neglected and destroyed. He was in hopes their colleague, Mr. Alderman Johnson, would exert his influence to induce a regard for the works of ancient art which illustrated the history of the city of London.

Mr. Jerdan said that if the details of the acts of destruction alluded to were drawn up, he would ensure the case being represented in the proper quarter, so as to secure redress or public reprobation.

CARPENTERS' BENEVOLENT INSTITUTION.

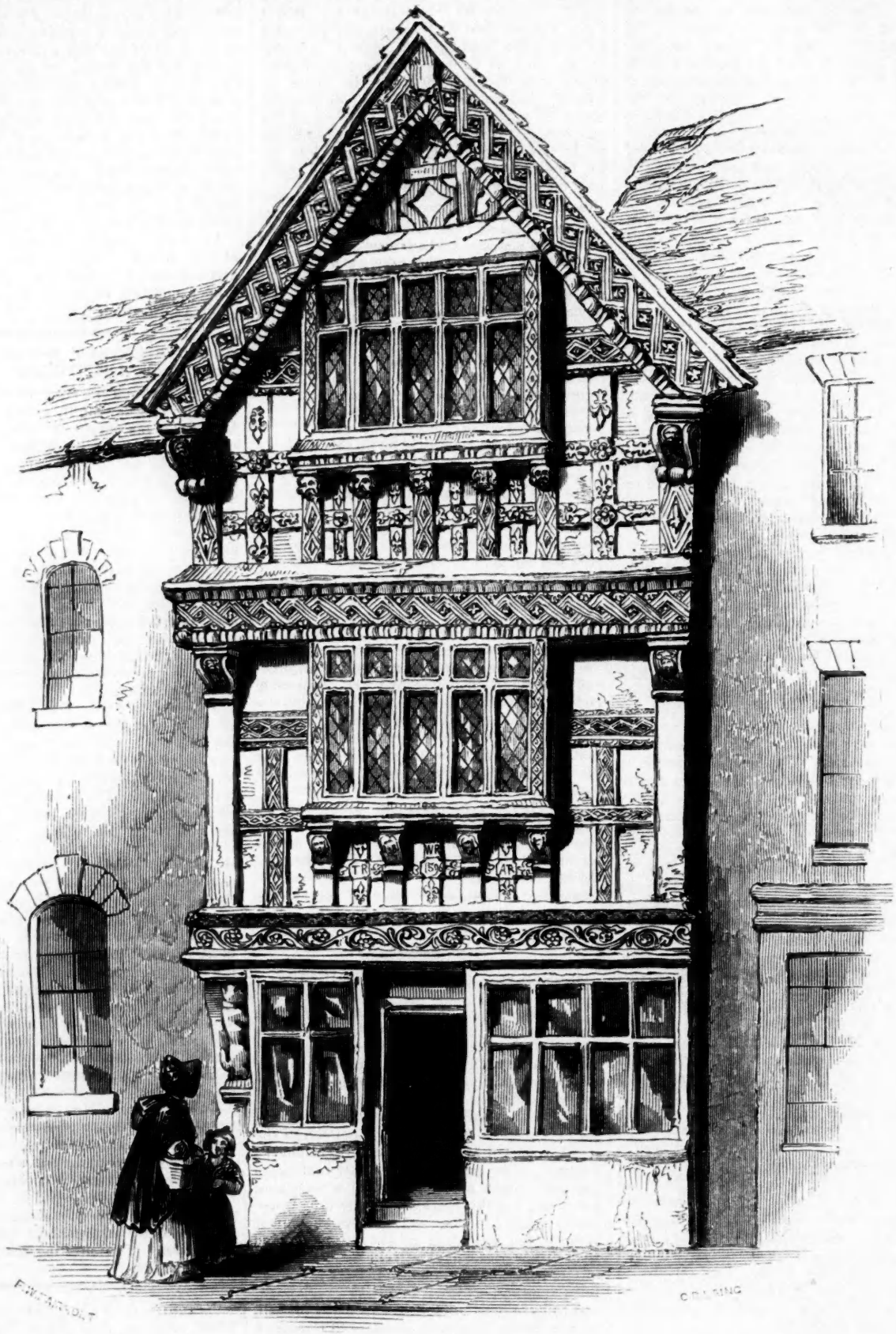
A numerous meeting of carpenters was held on Tuesday night, at the Bell Inn, Old Bailey, for the purpose of adopting rules, previous to enrolment, for a Benevolent Institution, for the support of aged and infirm carpenters, and the erection of an asylum for the reception of members and their wives. Mr. Waltenbury was called to the chair.

The chairman regretted that some one more efficient than himself had not been called to the chair, and better calculated to discharge its duties. At the same time he could assure the meeting that no one felt greater anxiety to carry out the object they had met to promote, and he hoped they would give every one a fair and impartial hearing, and discuss the merits of every proposition, no matter by whom brought forward.

The secretary (Mr. Bush), on the part of the committee, reported that they had waited on the different societies, and the universal opinion was, that such an institution had been long since required, and they would give it their support. The secretary then read the proposed rules, which were afterwards put *seriatim* from the chair. The rules provide that any carpenter, on subscribing six shillings annually, shall become a member, and be entitled to vote at all general meetings. A like privilege is conferred on donors of ten guineas, and subscribers annually of one guinea, payable in advance. Any member, incapacitated by old age or infirmity from following his employment, may become a candidate for the benefits of the institution, and on his election will receive 10s. per week from the funds until provided for in an asylum; and on the death of a member receiving relief (if married) the board of directors are empowered to assist the widow according as circumstances may require.

The rules up to No. 14 were discussed, and passed with a few verbal amendments. Mr. Aygate thought it was a great reproach to the carpenters of London, that while nearly every other trade had their almshouses, they, who were so actively engaged in erecting them, even from the time of staking out the ground to their completion, should have no place of their own. The meeting then adjourned to Tuesday next.

Building on a Quicksand.—A fine large house, says the *New York Journal of Commerce*, has just been built on the corner of the yard of Columbia College. In digging for the foundation, the earth proved to be a mere quicksand, with no cohesion at all between the particles, and it caved-in from far into both streets. The foundation was, nevertheless, laid; but, as the house went up, the cellar wall moved down, a little and a little more, but not enough to produce absolute discouragement to our go-a-head bricklayers, until the building had gone up six stories above the ground, with one or two below the surface. Then, when the cornices had been put on and the rafters raised, it became apparent that the house would not be safe, and the melancholy order was given to take it all down again! Men are now employed in bringing down the bricks which they had carried up with so much toil, and very soon there will not be one brick left upon another!



CARVED HOUSE AT STRATFORD-ON-AVON.

CARVED HOUSE, STRATFORD-ON-AVON, WARWICKSHIRE.

The natal town of Shakspeare possesses few ancient houses of higher character than that shewn as his birthplace, which originally was a habitation fit for a substantial yeoman. The elaborate ornamental carving, which is so profusely displayed in the neighbouring towns of Coventry and Warwick, meets with no counterpart here. It is probable, however, that Stratford at one period boasted similar decorated mansions, some of which may have been destroyed in the fatal fire which consumed a great part of this town in the seventeenth century. The house depicted in our engraving stands in the High-street, but a few yards from the site of New-place, the residence of Shakspeare, and his eye must have been frequently arrested by its quaint carving and picturesque appearance. Beneath the window of the first floor is the date 1596, carved upon the beam, above which are the initials W. R., with on one side T. R., and on the other A. R. These indicate the family of the builders, as a reference to the town books shews that a thriving trader, one Wm. Rogers, resided at that period in this house.

CONVERSION OF PLANE FIGURES.

Fig. 1

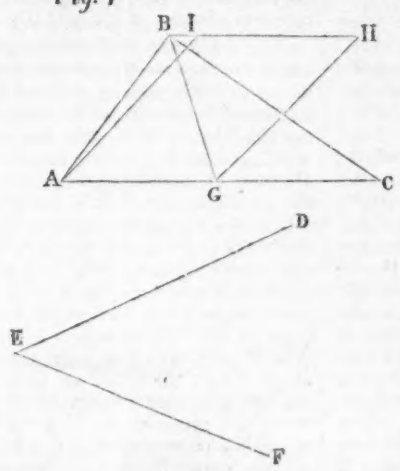


Fig. 2

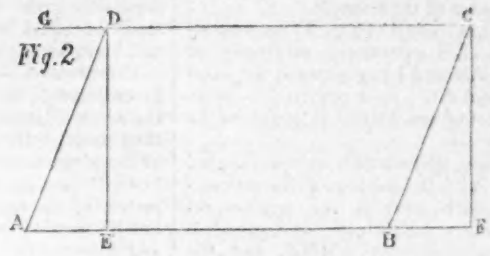


Fig. 3

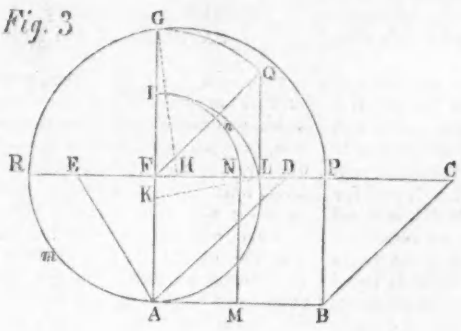


Fig. 4

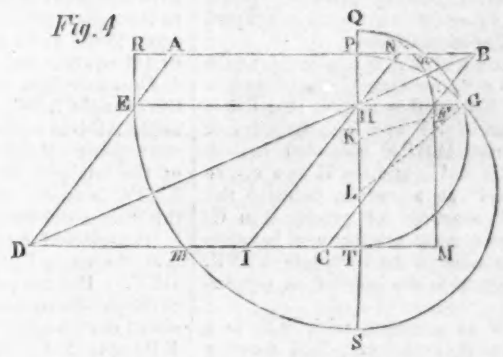


Fig. 5

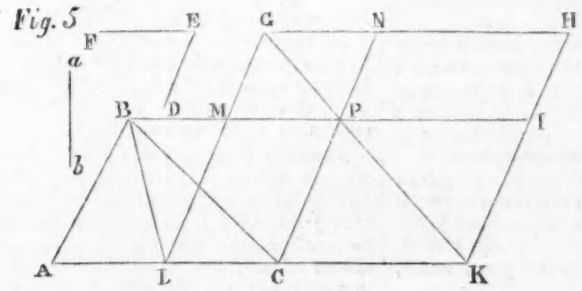
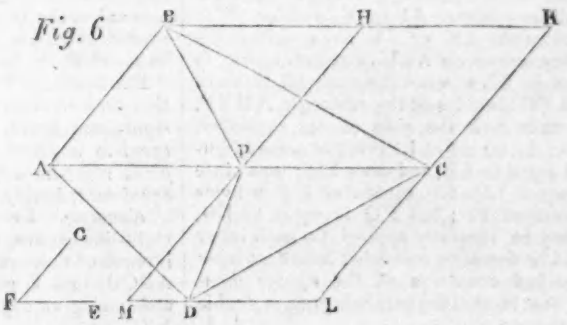


Fig. 6



PRACTICAL GEOMETRY.

THE CONVERSION OF PLANE FIGURES.*

PROBLEM.—*To construct a parallelogram that shall contain an area equal to a given right-lined triangle, and have one of its angles equal to a given angle; that is, to convert a given triangle into a parallelogram of equal area, having one of its angles given.*

Example.—Let ABC (Fig. 1) be the given triangle, and DEF the given angle; it is required to constitute a parallelogram that shall contain the same area as the right-lined triangle ABC, and have an angle equal to the given angle DEF.

Construction.—Divide AC, the base of the given triangle ABC, into two equal parts in the point G, and at the point A, one extremity of the base AC, make the angle GAI equal to the given angle DEF; then, through G, the middle of the base AC, draw GH parallel to AI, and through B, the vertex of the triangle ABC, draw the straight line BIH parallel to the base AC, and meeting the sides AI and GH in I and H, and AIHG will be the parallelogram required, containing an area equal to the given triangle ABC, and having an angle equal to DEF.

Demonstration.—Draw the straight line BG connecting the vertex of the given triangle at B, with the middle of the base at G; then, because AG is equal to GC by construction, the triangle ABG is equal to the triangle GBC, for they stand upon the equal bases AG and GC, and are between the same parallels AC and BH; therefore, the whole triangle ABC is double of the triangle ABG; but the parallelogram AIHG is double of the triangle ABG, for it stands upon the same base, AG, and is between the same parallels AG and HI; consequently, the parallelogram AIHG is equal to the triangle ABC, for things that are double of the same thing are equal to one another, and it has, moreover, the angle GAI equal to the given angle DEF.

Note.—When the given angle DEF is a right angle, the construction is somewhat simplified, as in that case we have only to erect perpendiculars at the points A and G to meet BI drawn through B parallel to the base AC, and the thing is done.

PROBLEM.—*To construct a right-angled parallelogram that shall contain an area equal to a given oblique-angled one; or, in other words, to convert an oblique-angled parallelogram, or rhomboid, into a right-angled parallelogram of equivalent area.*

Example.—Let ABCD (Fig 2.)be a rhomboid or oblique-angled parallelogram; it is required to convert the oblique-angled parallelogram ABCD into a right-angled one containing the same area.

Construction.—From D and C, the angles adjacent to one side of the given figure, let fall the perpendiculars DE and CF upon AB the opposite side, the one of them, DE meeting AB within the figure as at E, and the other, CF, meeting AB produced at F; then is DEFC the rectangular parallelogram required, being equal in area to the oblique-angled parallelogram ABCD given.

Demonstration.—Produce CD to G, then, since AD is parallel to BC, and GC meets these parallels in the points at D and C, the exterior angle ADG is equal to the interior and opposite angle BCG; and because DE and CF are each of them perpendicular to AB and its production, they are also perpendicular to GC, which is parallel to AB; consequently, the angles EDG and FCG are right angles; but the part ADG has been shewn to be equal to the part BCG, and, therefore, the remainder ADE is equal to the remainder BCF, and the triangles ADE and BCF are equal and similar, so that the part ADE, which is cut off from the rhomboid or oblique-angled parallelogram ABCD by the perpendicular DE, is equal to the part BCF, which is similarly applied to it by the perpendicular CF, and the whole EFCD

* See also "Geometry of the Square," p. 454.

is therefore equal to the whole ABCD; but EFCD is a rectangular or right-angled parellelogram, and it has been derived from the given oblique-angled parallelogram ABCD, so that the thing required by the problem is done.

PROBLEM. — *If a parallelogram and a triangle have the same base and are between the same parallels, it is required to prove by the principle of conversion, that the parallelogram is the double of the triangle.*

Example.—Let ABCD (Fig. 3) be a parallelogram and AEB a triangle, subsisting on the same base AB and lying between the same parallels AB and RC; it is required to prove that the parallelogram ABCD is double of the triangle AEB.

Construction.— Reduce the oblique angled parallelogram ABCD, into the equivalent rectangular one ABPF, and in like manner, reduce the triangle AEB into its equivalent rectangular parallelogram AMNF, and the parallelogram ABPF shall be double of the parallelogram AMNF, since the base AB is double of the base AM; but the parallelogram AMNF is equal to the triangle AEB, and ABPF is equal ABCD; hence the equality enunciated in the proposition is already manifest, but to carry out our principle of conversion, we shall throw each of the rectangles ABPF and AMNF into an equivalent square, as this is the figure which we have adopted as the standard of comparison.

On F as a centre with FA as a radius, describe the quadrant A*m*R, meeting CF produced in R and making FR equal to FA, so that PR is equal to the sum of PF and FA, the sides of the parallelogram ABPF extended in one line. Bisect PR in H, and on H as a centre with HR or HP as a radius, describe the semicircle RGP meeting AF produced in G, and making FG a mean proportional between FP and FA the sides of the rectangle ABPF, and consequently it is the side of an equivalent square.

Again, on F as a centre, with FN as a radius, describe the quadrant N*n*I meeting AF produced in I and making FI equal FN, so that AI is equal to the sum of FA and FN the sides of the rectangle AMNF extended in one line. Bisect AI in K, and on K as a centre with AK or IK as a radius, describe the semicircle ALI intersecting FP in L; then is FL a mean proportional between FA and FN the sides of the rectangle AMNF, and is therefore the side of an equivalent square. At the point L erect the perpendicular LQ equal to LF, and draw FQ; then since FL is equal LQ, the square of FQ is twice the square of FL; but FQ is equal to FG, for if they be carefully applied to each other they will be found to coincide; hence we infer the specified condition of the figures mentioned; that is, that the parallelogram is double of the triangle.

PROBLEM.—*It is required to prove by the principle of conversion, that in every parallelogram, the complements of those parallelograms which are about the diagonal of the given parallelogram are equal to one another.*

Example.—Let ABCD (Fig. 4) be a parallelogram of which the diagonal is BD, the complements of the parallelograms which are about the diameter being AEHN and CFHI; it is required to prove that these complements are equal to one another.

Construction.— Convert the oblique parallelograms AEHN and CFHI into the equivalent rectangular ones EHPR and FHTM; then on H as a centre with the radii HE and HF, describe the circular quadrants E*m*S and F*n*Q meeting HT produced in S and HP produced in Q, so that HS and HQ shall be respectively equal to HE and HF; then is PS the sum of the sides EH and HP extended in one line, and QT is the sum of the sides HF and HT similarly extended. Bisect PS in L and QT in K, and on K and L as centres with radii KQ and LP describe the semicircles QGT and PGS intersecting EH produced in G; then is HG a mean proportional between HQ and HT, and is consequently the side of a square which is equivalent to the rectangle HFMT; but HG is also a mean proportional between HE and HP, and is therefore the side of a square equivalent to the rectangle EHPR; these two rectangles are therefore equal; but they are equal to the complements AEHP and HFGI; hence the equality of these complements is manifest.

PROBLEM.— *To construct a parallelogram upon a given straight line, that shall be equal in area to a given triangle, and have an angle equal to a given angle; that is, to convert a given triangle into a parallelogram of equivalent area, having one of its sides and one of its angles given.*

Example.—Let *ab* (Fig. 5) be the given straight line, DEF the given angle, and ABC the given triangle; it is required to constitute a parallelogram on the straight line *ab*, that shall be equal in area to the triangle ABC, and have an angle equal to DEF.

Construction.—Bisect AC, the base of the given triangle in L, and at the point L make the angle CLM equal to the given angle DEF; then through C, the extremity of the base AC, of the given triangle ABC, draw the straight line CP parallel to LM, and through B, the vertex of the triangle ABC, draw the straight line BI parallel to AC, the base of the triangle, and intersecting LM and CP in the points M and P. Produce LM and CP directly forward to G and N, making PN equal to *ab*, the given line; through the point N draw the straight line GNH parallel to BI, and join GP, which extend directly forward to meet AC, the base of the triangle produced, in K, and through K draw KIH parallel to CPN, and meeting BI and GH in I and H; then is PNHI the parallellogram required; being equal in area to the given triangle ABC,—having an angle equal to the given angle DEF, and a side PN, or IH equal to the given line *ab*.

Demonstration.—Because AC the base of the triangle ABC, is bisected in L, the triangle ABL is equal to the triangle LBC, and consequently the whole triangle ABC is double of the triangle LBC; but the parallelogram LMPC is double of the triangle LBC, and for this reason the parallelogram LMPC is equal to the triangle ABC, and it has by construction, the angle CLM equal to the given angle DEF. But the parallelogram PNHI is equal to the parallelogram LMPC, being complements about the diameter GK, and it has the angle NPI equal to CLM, and moreover it is applied to the line PN, which is equal to the given line *ab*; but it has been shewn that LMPC is equal to the triangle ABC; hence also PNHI is equal to the triangle ABC, and as the other conditions of the problem have been shown to be satisfied, the thing required is done.

PROBLEM.— *To construct a parallelogram that shall be equal in area to a given four-sided right-lined figure, and have one of its angles equal to a given angle; that is, to convert a given right-lined figure into a parallelogram of equal area, having one of its angles given.*

Example.— Let ABCD (Fig. 6) be the given right-lined figure, and EFG the given angle; it is required to convert the given right-lined figure ABCD into a parallelogram of equal area, and having an angle equal to the given angle, EFG.

Construction. — Draw the diagonal AC, dividing the given figure ABCD into the two triangles, ABC and ADC, and divide AC into two equal parts in the point P. At the point P, make the angle CPH equal to the given angle EFG, and produce HP in the opposite direction to M. Through C, the extremity of the common base AC, draw the straight line LCK parallel to MH, and through the opposite angles, B and D, draw the straight lines BK and ML parallel to AC the diagonal, and to each other, and meeting MH and LK in the several points, M, H, and L, K, thereby forming the parallelogram MHKL equal to ABCD, the given figure, and having an angle equal to EFG, the given angle.

Demonstration.—Because the diagonal AC is bisected in the point P, the whole triangle ABC is double of the triangle PBC; but the parallelogram PHKC is double of the triangle PBC, since it stands upon the same base, PC, and is between the same parallels, PC and BK; consequently, the parallelogram PHKC is equal in area to the triangle ABC, and it has the angle CPH equal by construction to the given angle, EFG.

Again, since AC is bisected in the point P, the whole triangle ADC is double of the triangle PDC; but the parallelogram PMLC is double of the triangle PDC, since they are upon the same base PC, and between the same parallels PC and ML, therefore the parallelogram PMLC is equal to the triangle ADC, and it has the angle LMP, equal by construction to the given angle EFG. But the two triangles, ABC and ADC, are together equal to the given figure ABCD; hence, also the two parallelograms PHKC and PMLC are together equal to the given figure ABCD, so that the given figure has been converted into a parallelogram of equal area, and having an angle equal to the given angle EFG, according to the conditions of the problem.

Note.—EUCLID performs this problem differently, but not so simply and elegantly as by means of the foregoing; his mode of construction is as follows:—draw the diagonal AC, dividing the figure into the two triangles ABC and ADC, and bisect the diagonal AC in the point P; then, upon half the diagonal PC, constitute the parallelogram PHKC equal to the triangle ABC, and having an angle equal to the given angle EFG. To the straight line PC apply the parallelogram PMLC, equal to the triangle ADC, and having an angle equal to the given angle EFG; then is the whole parallelogram MHKL equal in area to the given figure ABCD, and having an angle equal to the given angle EFG, the same as before. The preceding is the general method of solution; but when the given angle is a right angle, the operation is somewhat simplified, and the resulting parallelogram is better adapted for practical purposes.

EARLY AND RIGHT-DIRECTED PATRONAGE TO ARTISTS.

SIR,—In your last week's paper I saw a succinct account of the early career of Gibson in his profession, and what struck my attention was, that while he was unknown to fame, and obscure (as every genius must be in the beginning, until some kind hand is stretched forth to bring him into notice), Mr. Roscoe came forward, and was not only his early patron, but was the means of procuring a succession of munificent patrons. Surely, under such an auspicious beginning, any man that had abilities for his profession must have prospered. Give a "sound" vessel but fair wind and deep water, and you may be certain of a prosperous voyage. I consider, sir, the commencement of Gibson's career as a sculptor an auspicious one indeed; and I would here observe, that the most important part of an artist's life is the beginning; and it may not be out of place if I further observe, that all those who wish well to art and its cause, could not confer a greater blessing upon it than to direct attention to the able who are obscure and for the first time send their works for exhibition.

Attention thus directed might be the cause of not only aiding art, but of rescuing many (who have spent the best part of their lives in arduous study) not only from disappointed hope, but despair and an untimely grave. It is a strange matter of fact, that many who have devoted themselves to this profession have more or less been martyrs for the cause. A score of such cases occur as the year rolls round, that the world knows nothing of, because they are obscure. Little do the thoughtless think (when they are gazing upon some painting) of the weary hours, and it may be at last, the disappointed hope, which has driven the author of it to despair and an untimely grave. It is true he may have produced a creditable piece of work, and sent it forth to the world; but the world had contented itself by looking to those only which were familiar to it, and well known to fame. The critic, too, might pass it with indifference; or if he did stop to say any thing, it might be to cast upon it some thoughtless brand. In such a case it is no wonder,—in fact, a man must be more than human if he did not sicken under this state of things.

Now, had such a one received the timely aid, such as Roscoe gave to Gibson, there would not only have been one saved from an untimely grave, but, through his talents, a blessing conferred on generations yet unborn. Now mark the inconsistency (it may be an "oversight") of the world,—let us hope so. It may be that such hath lain in his grave three, four, or a score of years, when the value of his painting becomes appreciated; then there is offered for it not only the amount which he asked for it (which would have saved him from a world of woes), but twenty, ay, forty times the amount. But what good does this now? Nay, is it not a mockery to the dead? Can *that* bring back life? Can it

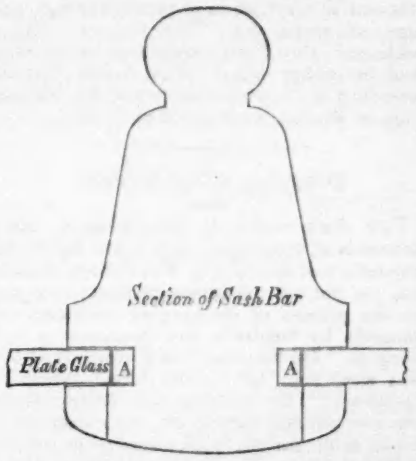
pour balm in that broken heart, and recover that distracted mind? Then would it not be more prudent as well as human for those that would be patrons and aid art, to take Roscoe as their model in this case? In doing so, they would not only confer a lasting benefit on art and posterity, but it might be that "the blessing of him that was ready to perish might come upon them," and perhaps in the end it might be said that they had "caused the widow's heart to sing for joy." It will be readily perceived, that when I say this I mean not those who have been surrounded with "appliances and means" of every kind from their youth up,—who take it up as a novelty, not as a profession,—but those who have devoted their very heart and soul to this laudable work—who have spent all that they had in their studies and travels; and who now sit down, asking no more than that their abilities will be appreciated and rewarded accordingly.—I am, Sir, &c.,

T. W.

NOTES IN THE PROVINCES.

The Eton College Chapel alterations and improvements, begun in the summer, under Mr. Noel's superintendence, will be finished early in December.——A central site for the Bucks Lunatic Asylum has been advertised for. ——A committee has been appointed by the council at Southampton for the establishment of baths and washhouses. —— The Earl of Digby has given the munificent donation of 2,500*l.* towards the repair and restoration of the Sherborne Abbey Church, for which 5000*l.* will be required.——We perceive that the Diocesan Church Building Associations, both at Ripon and Bath, have been holding their meetings, and reporting their grants towards various church and other works, for which we must refer to a separate paragraph.——Consecrations of churches have recently taken place in the Ripon and Lichfield districts, at Lichfield and at Manstone in Barwick-in-Elmet, and Wyke in the 'umquhile' parish of Birstal,—one at Baptist Mills, in the south-western district of the country, also, will shortly take place. The Manstone and Wyke buildings are in the early English style, the last for 700 and the first for 300 persons. That at Lichfield will seat 400,—pews all open. The architects of that at Wyke (St. Mary's) were Messrs. Mallison and Healey of Bradford and Halifax, and those of St. James's, at Manstone, were Messrs. Perkin and Backhouse of Leeds.—— The foundation-stone of St. John's Church, Little Holbeck, was laid on Saturday week. It is to be built in the early pointed style, from a design by Mr. Scott, and will consist of a nave, aisles, and chancel, with high-pitched roofs supported on lofty clustered pillars, and carried out interiorly 'with more finished details than is usual for modern churches,' and at more than ordinary expense.——The inhabitants of Hull, according to the *Packet*, have at length 'got an excellent supply of good water' through their new water-works, which are said to be well constructed, but not sufficiently extensive. The wholesale system of dosing the people with oceanic salts, as heretofore, will thus be a benefit of which they will be likely to be forthwith unfortunately deprived. The question of either expending an additional 7,000*l.* on the new works, or repairing the old for occasional service, however, is at present under discussion.——The new barracks to be erected at Sheffield, the contracts for which have been advertised for, will, it is said, be on a scale of some magnitude. ——The trustees of Sir John Wm. Ramsden have at length begun to lay out the 20,000*l.* left by the late Sir John Ramsden for the improvement of Huddersfield. The improvements have been commenced at the George Hotel, by the very appropriate enlargement of the door through which the tenants of the lord of the manor, with their pockets full of the rents, may with less difficulty than heretofore arrive at the place usually occupied by the stewards. This, says the *Bradford Observer*, is the beginning of the laying out of the 20,000*l.* left by Sir John Ramsden, Bart., several years ago, to improve his own town of Huddersfield. By those who know the pace at which the coach travels which is driven by the gentlemen who have the management of the fund, it will be fully appreciated.—— Several hundred men are engaged in the various works connected with the Sunderland Docks, which are proceeding 'with great energy and spirit.'——In the village of Wellow, Notts, a house, in the Gothic style, has been erected of brick with dressed stone windows, copings, and other decorations, for Mr. W. S. Ward. Immediately in the neighbourhood are in course of erection a chapel, and two class-rooms, in addition to the Ollerton National School, with stone bell-turret, &c., all from the designs of Mr. J. A. Blenkarn, architect.——A small church, with chancel and bell-turret, is now in progress at Leverstock-green, near St. Alban's, under the able direction of Messrs. R. and J. Brandon, the erection of which is principally due to the liberality of the Earl of Verulam. The church will afford accommodation for about four hundred worshippers, and the contract is taken at 1,600*l.* The walls are to be built of flints, and the windows, piers, and arches, base mouldings, strings, &c., of Caen stone.

TO PREVENT FRACTURE OF GLASS IN SASHES BY VIBRATION.



Sir,—Above is the section of a sash-bar, such as is used for heavy plates of glass in modern shop-fronts. It is no unfrequent thing to find large and valuable plates of glass cracked and ultimately fractured, not by any accidental blow, but from the weighting of the fronts, the pressure of the sash, or the vibration of the streets. Any one of these causes may act independently, but frequently all combine to fracture the large plates of glass at present used. The settling of the fronts must be remedied in the construction of the beam thrown over the opening; but cracks, through the nipping of the sash-frame and the vibration, may be prevented by the means shewn in the accompanying section. Plough a groove in any sash-bar, as shewn at A, and fill it in with vulcanized indian-rubber. This may be purchased in sheets, and then cut up into strips of the required breadth, and let into the groove so as to receive the bearing-edge of the plate-glass all round. It will not need any argument to prove that the glass will be no worse for resting on this yielding pad, and that it will be so preserved from fracture. I have had it in trial for nearly twelve months in some shops in Manchester, where the glass is in two squares, 15 feet deep: it has answered admirably. Robert Rawlinson.

Liverpool, Nov. 5.

Wood Pavement.—The repaving of Lombard-street with wood was proposed on Tuesday before the Commissioners of Sewers, City. It was opposed by Sir Peter Laurie, but strongly supported by others; and it was eventually carried by a very large majority—23 to 6. The cost will be about 900*l.*; but the bankers residing in that street have undertaken to defray one-third of the expense of the new paving.

Stain for New Oak.—A correspondent, who objects to the use of lime-water as a stain for oak, on the ground that the colour produced, though good at first, becomes in two years of a foxy red, says,—For new work, especially church work, let no oil, no ash come near it, but wash it with *hot beer*, and rub it well; the grain will show admirably, and time will mellow it down to a tone which never could be acquired if it had been previously doctored.

RAILWAY JOTTINGS.

We rejoice to observe that there at length appears to be even a commendable emulation amongst the railway directors of different lines to be amongst the first to institute a series of experiments for the establishment of the means of safety and convenience to passengers in railway transit. Besides those already recorded, we now find that the Eastern Counties Company have adopted a 'railway train alarum,' called 'Dutton's Railway Communicator,' in one of their daily trains, for what the advertisers of the apparatus declare to be the 'instantaneous and unerring communication between the guards and engine-driver, and, if desired, between the passengers and guards.' On the Brighton and Chichester branch line, too, experiments have been gone into, on a plan of Mr. Brett's, for the completion of the electro-magnetic circuit through the mere hooking of the safety chains between an alarum bell beside the driver and a battery in the last carriage of the train. A like communication, it is remarked, may also be established between the passengers and the driver, but that would never do; the guards must be the only connecting wires, or hooks, or rods, between these two ticklish extremes, and probably no better plan than the one at first suggested by ourselves, and since by others, for the conversion of one of the side foot-ways, or both, into a regular *beat* for the guards, has yet been proposed, unless it be the opening of a similar beat through the carriages themselves, which certainly is less unobjectionable. Of course spring or alarum bells, beside the seats of the guards, and made to wind up and be capable of repeating an alarum for a number of times, like Messrs. Brett and Little's, with some sort of bell-pulls and handles in the carriages, might be added, for further promptitude or convenience; and even for the trifling or wanton annoyance of the guards, foolish passengers might be made liable to be fined,—to a small extent of course,—commensurate with the limits to which their mischief-making or alarum-exciting faculty would thus be effectually confined. A more complete system of surveillance and *guard*ianship will probably not be readily attained at less expense or inconvenience otherwise; and if there should, we would as readily advocate its adoption. As to the communication between guard and driver, that of course is a desideratum apart from that between passengers and guards. We confess it would warm our heart to hear the stirring sound of the bugle or the trumpet on the rail of new, as on the road of old; and surely one guard might at least be able to pass on the echo to another, till it rang in the driver's ears beyond even the wildest screech of 'hell in harness,' or the din and rattle of the rail. And what, then, could be simpler, or more prompt, or ready, or effectual, than two such systems as those just recommended acting in mutual concert, and infusing life and liberty into railway transit, in place of the present passive, helpless, hurrying onwards in the midst of accidents, 'through thick and thin,' to so frequently 'inevitable destruction?' Of the practical working of highly scientific apparatuses, such as electro-magnetic wires, cords and pulleys, rods, &c., linking along a whole train of carriages, &c. &c., we have great and reasonable doubts, and in the same category we fear, too, even though *per se* a simple and ingenious enough suggestion, we must class a proposal, recently revived, to provide the driver with a mirror facing him on the funnel, in order to reflect the guards' dumb signals. Notwithstanding the compatibility of the angles of incidence and of reflection, the gradients and the curves, with the driver's all but uninterrupted process of 'taking a sight,' there is one objection which a very small angle of reflection might have by incidence suggested, *videlicet*, that but too frequently the whole of the guard's dumb show might, at the critical moment, end in *smoke*, and the driver thus fail to obtain his 'sight,' even while he might be looking, without ere a mote in his eye, for the wave of the 'ensign' by day, or even for the beam of the bull's eye by night.——By the way, we were led to attribute the suggestion of the connection of the certainly most effectual screech of the whistle with the completion of the galvanic circuit (either by wires, we presume, or by Messrs. Brett and Little's more practicable method) to Mr. Crampton, at the meeting of mechanical engi-

neers at Birmingham, whereas Mr. Edward E. Allen informs us that the suggestion was his, although Mr. Crampton appears to have also taken part in the discussion.——The cognate subject of the break is still exercising the inventive and appropriative faculties of many who are anxious, some to be of use to others, others to themselves. Amongst the more recent inventions, one has been patented by a Mr. Tibbet, which is to act as a drag on the wheel, while the break block is pressed with force on the rail. It is to be suspended between the wheels from a strong bearing spring, which keeps it away from the wheel and the rail when not required. The command of it is in the hands of the guard, who works it by means of levers acting on a flanged wheel, or barrel, placed in the centre of the axle, which has a spiral thread cut on its surface, into which cogs or teeth, on the under sides of the levers, take, and prevent the spring from pulling up the break block, as long as it is necessary to keep it in action.——The plan and description of another sort of break, a self-acting one, have been submitted to our inspection by the inventor, Mr. Vincent Yardley. The re-action on the buffers when the driver checks the engine brings this break into action. When the momentum of the carriages, as each comes close up to the one preceding, presses on the buffers, these in their turn press on a rod which turns an eccentric lever, and thus, by the flattening and elongation of a spring (kept back apparently by the counterspring of the buffer when not in action), an elm block with an iron worm surrounding the axle is pushed towards a screw on the end of the same axle, and as the screw enters the worm in order to lock the axle, the block, by means of a pair of iron rods, also brings a pair of strong carriage springs into action on a pair of friction blocks, which grip the axle and retard its movement till the climax of the lock is reached,—by the sliding of the block along a rod as the screw enters,—when the worm, having arrived at its limit on the screw, arrests the motion of the axle and the wheel, unless, indeed, the break itself be broken. In such an invention as this, doubtless, a *simplification* of the mechanism might be easily suggested. The carriage springs, the friction blocks, and the rods connecting the springs with the worm block, for instance, *might* be all dispensed with and the simple break alone remain, if mere simplification of mechanism were to be looked to; but it seems evident that a simplification here would be precisely what would lead right headlong into danger, by leaving nothing but the abrupt,—though certainly simple and effectual,—break of the worm and screw to arrest the carriages,—a simplification probably almost equal to a collision itself—if the break or the axle withstood the simplification, which, of course, they could be made to do without any increase or complexity of mechanism. Indiscriminately to recommend simplification therefore, in such inventions, is much more likely, we should think, to engender danger and evil than would even a like recommendation designedly to complicate the mechanism. A reversal of a few yards, Mr. Yardley adds, will be sufficient to unlock this break.——Mr. Charles Fox, engineer, and Mr. John Coop Haddan, civil-engineer, have recently patented improvements in chairs and trenails or fastenings, in machinery for preparing trenails and sleepers, and in switches. The chairs have a stud for a recess in the sleeper, and the holes for the trenails are rounded to prevent injury to the trenail: the chairs are to be moulded thus, and the trenails to be made of a form suitable to the chairs, by new self-acting machines. The sleeper-machinery is for recessing them for the chairs. The switches at sidings are to move vertically. The specifications of most of these inventions, however, are too long even for abstract here.——British engineers and mechanics have not only been for a series of years enticed into France by high remuneration, but have at length taught the French to vie with ourselves in all that regards the science and art of engineering, although their railway system has progressed so rapidly that in spite of high protecting duties they cannot yet do without us altogether,—a circumstance, it seems, which gives them no little annoyance. In 1820 there were only 15 steam-engines in all France; while, at the present time, there are 4,500, representing the power of 53,480 horses, and having 7,980 boilers.——The average contribution by the English railways to the local and parish rates every year is said to amount to 5 per cent. of their earnings, estimated at nearly 8,000,000*l.* a year; in round numbers, 400,000*l.* towards the 6,000,000*l.* annually raised for the poor,—that is, a fifteenth of the total rates, and fifty times what the same quantity of land contributed before its conversion to railways.——Three cases of compensation have just been decided at Antrim, where three brothers had been offered 50*l.* each for their interest in the one-eighth of two acres, three roods, eight perches of farm ground, which they refused, and demanded three separate juries, who accordingly awarded to each of them 36*l.* 15s, with 9*l.* 7s. 6d. for 'consequential' expenses,—thus causing them to defray one-half the expense of the counsel on their three-juried trial, besides losing 20*l.* each.——The bridge or viaduct over the Boyne, at Drogheda, on the Dublin and Belfast Junction, will be composed of iron lattice-work, and supported on four columns; and will, it is said, combine strength with apparent lightness. The height over the river is 95 feet, and the span between the two inner columns 230 feet, so as to permit the free passage of ships, &c. The railway will be continued over Gothic arches up to the main land on either side. The whole expense including a shipping wharf, and an inclined plane on arches, is estimated at 50,000*l.*

SUSPENSION OF WORKS.

The sharp notice to quit, which so many thousands of those lately engaged in laying the foundations of the railway wealth have already got, has not yet exhausted its dispiriting *fiat*, for the process of discharging workmen and labourers by hundreds and thousands is still going on. On Saturday week upwards of 500 men were paid off by the Great Northern Company. The Oxford and Rugby works are now entirely suspended, and a quantity of bricks made for the works were to be sold on Friday at Upper Heyford, under a 'distress' for duty. Near Aynhoe some of the land staked out for the line is about to be ploughed up and sowed with vetches! Messrs. Sherwood, the contractors for the line, had to face their creditors the other day, and assure them that the money to become due to them in three and six months would be sufficient to pay their demands. A Birmingham correspondent of the *Morning Herald* writes:—"I am sorry to say the mechanics and labourers heretofore well employed by railway companies are being daily discharged. On Saturday last a considerable number of hands employed in a large carriage manufactory were discharged, and many more will follow on Saturday next. Add to these thousands of navvies in this town and neighbourhood, and we shall have an enormous number of unemployed persons immediately thrown upon the rates and the roads."——The men employed on the South Western line, known as 'metal men,' and others, having been ordered to work only from nine in the morning till five in the afternoon, for wages of 1s. 6d. per day each, refused to comply, and struck work almost to a man. They do not seem to know yet that half a loaf is better than none. But the masons on the new bridge and viaduct across the Tweed, at Berwick, seem to have yet to learn that a whole loaf is better than half a one, for they have thought proper to strike in consequence of an attempt to reduce their weekly wages from 27s. to 24s. How many hundreds of masons are there already who will thankfully strike into that provision for their families whence their free but unaccepting brethren have just struck out? The Irish, too, are now, as ever, at cross purposes with every one else, themselves included, as one of themselves, if he were only some one else, would readily add. The labourers on the Killarney Junction, in a numerous body, have also struck work, though certainly in the somewhat sympathizable resistance to a proposed reduction of wages from 8s. to 6s. a week, as a full equivalent for their labour. They have also, however, endeavoured to compel the masons' labourers to quit their work, and thus throw the masons idle. This they were fortunately prevented from doing, and two of the ringleaders were lodged in Bridewell. The poor masons and their labourers, we fear, would require good ball-proof sheds to work in; and as for the contractors, we would rather be in a good coat of ancient armour than within their devoted epidermis.

WESTMINSTER COURT OF SEWERS.

A special court was held on Friday, Nov. 12; Capt. Geo. Bague, R.N., in the chair.

The clerk (Mr. Hertslet) reported, that in obedience to the order of the last court that he should remind the Lord Chancellor, through his secretary, of the period when this commission would expire, he had waited upon Mr. Wing yesterday, and remarked that this court had received no answer to the petition they some time since presented for a new commission. Mr. Wing said he could state that it was the intention of the Lord Chancellor not to renew the commission until the report of the Metropolitan Sanatory Commission had been received. Mr. Hertslet reminded the secretary that, unless it was renewed, it would run out on the 5th of December. Mr. Wing replied, that *it must run out*, unless the report of the Sanatory Commissioners should be made in the meantime.

This answer led to a short conversation, which was terminated by an order to the clerk to report the matter officially to the next ordinary court.

The Action against Mrs. Webb.—Mr. Allason brought under the notice of the court the subject of the order given to Mr. Smith, the solicitor, to defend the action entered by Mr. Farlar in the Marshalsea Court, for an amount claimed by him on the part of a Mr. Gigner, for the accommodation of a sewer constructed by him at Chelsea. (This matter was reported fully in The Builder of last week.) Mr. Allason now wished to know how far they could proceed, not being the *bonâ fide* defendants in the case, and whether they could legally apply the money of the rate-payers to defend the law-suit involved in these proceedings? By the orders thus given to their solicitor, he believed they were establishing a bad precedent, and it might lead to resistance to their assessments.

The chairman said, that during his walks within the last few days he accidentally fell in with Mr. Whitehead, and casually mentioned to him Mr. Farlar's claim of ownership of the sewer in question, and that gentleman assured him that he had himself built the whole of the sewer from the centre part of the church to the river-side, therefore it would appear very doubtful whether any portion of it really belonged to Mr. Farlar. By some means or other Mr. Farlar had turned one of the sewers from Cromwell-lane to drain it, and, houses having been subsequently erected near to it, he had claimed the sewer as his own.

Mr. Gunter thought that parties acting on advice received from this court should be borne harmless; and he was quite ready to subscribe his share of the expense incurred in defending the action.

Mr. Le Breton protested against the question being re-opened, and thought that before any alteration could be made notice must be given, as it would be unfair to the ten gentlemen who had voted for the resolution that it should be altered in their absence.

The solicitor was of opinion that the commissioners could defend any thing that in sound reason they might deem necessary. However, he thought it was a dangerous precedent for this court to take up the cases of parties who were quite able to defend themselves. As he had not the honour of practising in the Marshalsea Court, he should be compelled to hand over the case to another solicitor.

The matter was terminated by an order to the solicitor to report on the whole subject at the next court.

The next order of the day was a notice given by Mr. T. L. Donaldson at the last court:—"To consider the proceedings to be taken in regard to compelling parties to drain into sewers already built, and to pay contributions to the cost of the original construction; and to rescind, if necessary, the resolution of the 27th of July last with respect thereto."

Mr. Donaldson said, as considerable discussion arose at the last court on this subject, it was his opinion that a special court should be called to consider the question, without at all committing himself to any desire to rescind the resolution. The latter sentence of the resolution he had inserted at the suggestion of the clerk, so that this court might be quite free, if they saw any reason to modify their former resolution. He was of opinion they should form their orders in such manner, profiting by the experience derived from the resistance of Mr. Farlar, to render them as efficient as possible, and moved, in pursuance of these views, the following resolutions:—

"That the surveyor do report on the plans and

statements delivered, and report the same to the next court."

"That the owners of sewers built within thirty-five years prior to the 2nd of July, 1847, who shall make application under the new Act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer or sewers so built by them, shewing the several houses and premises fronting thereon; with a statement of the sums contributed by this commission, or other bodies or parties, in aid thereof, and the sums already paid for each house from which a drain has been laid; and also shewing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should now be laid into the sewers so built by them."

"That when the court shall have considered the report of the surveyor, and have apportioned the sums to be paid for draining into the sewers, the following form shall be forthwith issued by the court:—'Sir,—By virtue of the provisions of an Act of Parliament made and passed in the session of Parliment held in the 10th and 11th years of the reign of her present Majesty Queen Victoria, intituled an Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster and part of Middlesex, notice is hereby given to you, by the Commissioners of Sewers for the City and Liberty of Westminster, &c., that you have not drained your house and premises, situate No. — in ———— by any covered drain leading from such house and premises into the sewer which is in front of such house; and take notice that you are compellable by law not only to construct a covered drain to lead into such sewer, but also to pay such sum of money as the said Commissioners of Sewers shall deem just towards the original construction of such sewer. And further take notice, that you are required to drain your said house and premises in manner aforesaid, and to make contribution towards the building of the said sewer, and that you are also required to attend at the office of the commissioners, situate No. 1, Greek-street, Soho-square, any day (Sunday excepted), when particular information will be given to you as to the mode of obtaining leave of the said commissioners for making such covered drain, and as to the regulations to be observed in constructing the same. Such work to be done within twenty-one days from the date hereof.'"

The resolutions were adopted.

Correspondence.

REMOVAL OF THE QUADRANT ARCADE.

Sir,—The announcement in your last number relative to the proposal by the Commissioners of Woods to remove the Quadrant Arcade, cannot be allowed to pass unnoticed. The object they can have in doing so it is difficult to conceive; for as an architectural feature it is equally pleasing and unique, and forms a most graceful termination to the street; besides which, it is one of the few places in London where there is a footway sheltered from the weather. If the objection to it is the description of loungers for whom it forms an attraction, that is easily prevented, as it has lately been by the police, or by the erection of such a number of additional arcades in the newly-forming streets, that one should not be more attractive than another; or if the deficiency of light to the shops is unsatisfactory to the inhabitants, the roof may easily be made almost entirely of glass. While Paris rejoices in its Palais Royale and galleries, Venice in its Piazza, and Berne and other cities in their arcades, the convenience and beauty of which are so strikingly felt by all who visit them, why should a feature possessing originality as well as beauty and propriety, be swept away to gratify some foolish prejudice?

The want of new buildings to ornament our metropolis, and render it worthy of its place among the capitals of Europe, is to be lamented; but the destruction or injury of an existing monument is to be doubly reprobated. And we have reason to fear that the same taste which allows the pictures of the National Gallery to be scrubbed, and permits the Wellington Statue to remain, while it removes the Quadrant, and still more deforms the ugly palace of Pimlico by an incongruous addition, will find further scope for ingenious spoliation among existing works of art, as well as let slip opportunities for the embellishment of this city in addition to the many that have been already lost. L.

*** It is only right to say, that this step has been *forced* on the commissioners by the inhabitants of the houses.

GIRDER BRIDGES.

Sir,—As the girder bridge is often a subject of remark in The Builder and other journals, allow me, through your pages, to suggest the substitution of the principle of the balance in lieu of that of the *unbalanced* beam (the present girder). I am not singular in the opinion, that by adopting it in this branch of mechanics it may lead to great results; but whether it did or not, while circumstances prove—and every one knows—that there is something wrong in the present system—the safety of the public demands that every means should be tried for finding out that error. The principle of the balance is certainly the greatest mechanical power known, and that of the girder the weakest. Now, if the former can be substituted for the latter, it would be a great point gained; or at all events, my suggestion may lead to some improvement in bridges. I find the difference of power in the two principles to be, namely, in a girder 18 feet long, 1 foot deep, weighing 10 cwt., and only equal to bear a load of 10 cwt.,—that on the principle of the balance, of the same length and weight, it will sustain 7 tons 10 cwt., or a fifteen times greater load than the girder. The truss of these bridges, also, might be on the principle of the balance, and that would increase their power to the same extent as the girder; then, in combination, they would enable the bridge, upon the most economical and powerful principle known, to sustain to the outside power of the material, be what it may, every kind of transit-load in safety.

I am, Sir, &c.

A Lover of Mechanics.

Nov. 16th, 1847.

Miscellanea.

Novel Application of Electricity.—The *Pittsburgh Journal* has examined an invention made by Mr. Lilly of that city, in connection with Dr. Colton, which seems to challenge attention, not only for the ingenuity which it displays, but the useful results which it promises. The machine is a small locomotive, and is placed upon a circular railroad, around which it is driven by electricity. The power is applied, not to the locomotive, but to the track, and herein consists the novelty of the invention or discovery. Two currents of electricity, negative and positive, are applied to the rails, and from thence communicate with the engine. The latter is provided with two magnets, which, by a process of alternate attraction and repulsion, drive the car over the track. A piece of lead was placed on the locomotive, making in all a weight of about ten pounds, and on the application of the battery, the machine moved with astonishing rapidity up a plane inclined about five degrees. Heretofore the propelling power has been used on the car itself—in this instance, however, the power is placed in the rails, and an engineer might remain in one town, and with his battery send a locomotive and train to any distance required.—*New York Literary World.*

Effect of British Sheet Glass in Vineries.—Having used British sheet glass for glazing two vineries, says the Bishop of Rochester's gardener, Mr. J. C. Dwerrihouse, I beg to add my testimony to its scorching effect upon plants, and likewise to recommend a simple plan of preventing it. As burning in general may be traced to blisters, it is common to touch them with white paint. Now, in British sheet glass there are numerous spots and wavy lines, similar to those produced by a common burning lens, even though invisible when examined from the inside of the houses, but, I find, easily detected and remedied by taking off the lights, and leaning them, one at a time, against any smoothly-painted surface (having a southern aspect) during bright sunshine. A little thin white paint and a camel's hair brush will dim them sufficiently to prevent, I think, further mischief. Where it is impracticable to remove the lights, a thin light screen or board might be used, and moved along by a person inside; whilst another, with a paint-brush, on the roof, could perform the necessary operation. No person will be much pleased with the appearance of the glass afterwards; but it is much more agreeable to me than that of burnt leaves.

Let in the Light.—In an article on country cottages, *Bell's Messenger* observes truly, that "in considering the size of the windows of even our own rooms, the beneficial influence of light is far too rarely regarded. That such good effect, however, is constantly and materially exerted, is undoubted. It is an error to suppose that the action of light even upon the general health of man is immaterial; the natives of the deep dark forests of North America attest this by their unhealthy hue, as much as the blanched plants of the gardener. That the very nature of the gases evolved by plants is altered by the absence of light is known to almost every one; that small animals are often perceptibly affected by its absence is equally well ascertained. The experiments of Dr. Edwards on this subject are remarkable. He has shewn, for instance, that if tadpoles are nourished with proper food, and exposed to the constantly renewed contact of water (so that their beneficial respiration may be maintained) but are entirely deprived of light, their growth continues, but their metamorphosis into the condition of air-breathing animals is arrested, and they remain in the form of large tadpoles. Dr. Edwards has also noted that persons who live in caves and cellars, or in very dark and narrow streets, are apt to produce deformed children; and that men who work in mines are liable to disease and deformity beyond what the simple closeness of the air would be likely to produce. Do the constructors of the labourers' cottages in general sufficiently regard these things? Do they remember how great an influence the absence of light and of ventilation produces upon the health of their tenants? We dwell the more readily upon this too little heeded object in the construction of labourers' cottages, since it is naturally one of the most neglected and least understood advantages in a dwelling-house. It is too probable that the owner in general pays but little regard to these things, since he neglects even others of a still more important kind; and this arises most commonly, not from any unwillingness to serve his poor tenants, but from a want of consideration. Let the owners of such ill-constructed dwellings remember also, that when their inmates thus suffer in their health, they also from that cause suffer very considerable inroads upon their only capital, their labour. And again, other evils follow; their crowded home is rendered comfortless and distasteful, and the laws of decency and morality are alike outraged.

The Diocesan Church Building Societies at Ripon and at Bath have recently held their usual meetings, and have reported various grants, of which the following are the principal. The Bath Association have granted 680*l.* during the year towards the enlargement or building of various churches, including St. James's at Bath, Rowbarton at Taunton, Wellington, Penselwood, Hinton St. George, Kingsbury Episcopi, and Stanton Drew, providing in all for the accommodation of 1,584 persons; sittings mostly altogether free. The total amount of accommodation, in the providing of which the association has been instrumental, now numbers 21,432 additional sittings, of which 16,435 are unappropriated, and the total amount of grants is 9,252*l.* The association at Ripon have granted 4,138*l.* during the same period towards the erection of seven new churches, the enlargement of three, and the erection of eight parsonage houses, besides the endowment of two churches. They have in all provided church accommodation for 3,107 persons; sittings mostly altogether free. During the last eight years this society has expended 42,527*l.* odd, out of 200,000*l.* expended within the diocese, on the building of 54 new churches, the enlargement of 20, and the rebuilding of 12. Thus 32,668 additional sittings have been obtained, of which 28,404 are free, or let at a trifle; 41 churches have been endowed, and 54 parsonage-houses erected or purchased.

Lincoln Mechanics' Institution.—Sir C. Anderson, Bart., of Lea, delivered a lecture on the architecture of the early ages, at the Mechanics' Institute in Lincoln, on Tuesday evening in last week: his object being (as the baronet said) to kindle amongst the mechanics and labouring classes a taste for the beautiful in art, convinced as he was that those classes could appreciate the beautiful, and that the cultivation of good taste would lead to beneficial results.

MANUFACTURE OF IRON IN GREAT BRITAIN.—In a report on this subject made to the British Association, at their last meeting, Mr. Porter stated, that in 1788 the whole quantity of pig-iron made in England and Wales, amounted to no more than 61,300 tons; of which 48,200 were made with coke of pit-coal, and 13,100 from charcoal: in the same year the amount raised in Scotland was 7,000 tons. In 1796 the quantity, owing to Watt's improvement of the steam-engine, was nearly double, being 125,079 tons. Ten years later, viz. in 1806, it was found to have more than doubled, being—

England and Wales	234,966	tons.
Scotland	23,240	,,
Total	258,206	,,

In 1823, this quantity had risen to 482,066 tons, and in 1830 it was further increased to 678,417 tons. Since then a great saving has been effected in the fuel required, and in Scotland the production of iron has risen from 37,500 tons in 1830 to nearly 500,000 tons in the last twelve months. In 1836 every iron-work in Great Britain was visited by M. F. Le Play, chief engineer to the Paris Board of Works, and he estimated the amount produced that year at 1,000,000 of tons. The quantity of iron made in 1840 was 1,343,400 tons; but, in consequence of the commercial depression, this fell to 1,046,428 tons in 1842, being a depreciation of 22 per cent. It is the opinion of the iron-masters, that, since 1840, nearly all the increased production of iron in the kingdom has been drawn from Scotland. The make of pig-iron there, for the first six months of 1845, was 260,000 tons. From the cost of production, combined, perhaps, with other causes, the amount of production in England for 1845 was only 917,500 tons, being 238,000 tons less than the production of 1840. Up to the beginning of the present century, nearly two-fifths of all the iron used in this kingdom was imported from the north of Europe; but in 1806 this proportion had fallen to one-eighth, and foreign iron is now only imported for the manufacture of steel. Our exports, on the contrary, have so increased as to become an object of national importance. In 1827 we exported 92,313 tons, at the declared value of 1,215,561*l.* In 1845 we exported 351,278 tons, at the declared value of 3,501,895*l.* There is room for a very extended increase in the use of iron in England.

ARRANGEMENTS FOR RAPID INTELLIGENCE.—The electro-telegraphic arrangements for the concentration of all the lines at the central office, in Lothbury, says the London correspondent of the *Liverpool Albion*, are rapidly advancing towards completion. The coming importance of this new and wondrous agency is already foreshadowed in the announcement of a daily paper, to be exclusively devoted to the promulgation, in print, of the news received by lightning. The journal is to be called the *London Telegraph;* its hour of publication, twelve at noon; its price, threepence; its size, a folio, about half the dimensions of *The Albion;* and, that rapidity may be a characteristic of it in all respects, it is to be printed by one of Little's patent double-action machines, at double the speed hitherto obtained. It is to be ready simultaneously with the opening of the central station, but is unconnected with the company. It is understood to be a project of Messrs. Brett and Little, the inventors of the electric telegraph called after them: gentlemen who have made large and valuable contributions to science in various departments; and who have lately instituted a series of experiments on the Brighton and Chichester Railway, which bid fair to achieve, by extremely simple and inexpensive means, the long-sought desideratum for enabling passengers in trains to communicate with guards, and the latter with engine-drivers.

IMPERIAL AND CONTINENTAL GAS COMPANY.—A general meeting of proprietors of shares in this undertaking was lately held, at the offices of the company, White Hart-court, Lombard-street. The report of the board of directors congratulated the shareholders upon the continued prosperity of the company, and recommended a dividend of five per cent. on the paid-up capital of the company, for the half-year ending 30th June. The half-yearly report on the second capital was subsequently read, and a similar dividend on that, too, declared.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of officers' barracks, with mess establishments, at Sheffield; the construction of a new floating dock at Leith, with an extension of break-waters, and the erection of a low-water pier, and other works; also, for the building of a toll-house and offices near Leeds.

OXFORD ARCHITECTURAL SOCIETY.—At the first meeting this term, held on Wednesday, Nov. 3rd, after the report of the committee and the list of presents had been read, Mr. Jones, in behalf of the Dorchester sub-committee, announced the near completion of the restoration of the sacravium of the abbey church; the painted glass, however, was not yet fixed in the window. Mr. E. H. Lechmore, of Christ Church, one of the committee, read the first part of a paper, illustrated by plans and drawings, "On the Architectural Antiquities of the Cathedral of Basle." Mr. Lechmere, first briefly enumerating the leading events in the early history of the cathedral, which was founded by the Emperor Henry II., in the year 1010, proceeded to trace the remains of the earliest and most curious portions of the building. The cathedral, which is dedicated to the Virgin, and is as usual built in the form of a Latin cross, consists of a nave, decidedly the earliest portion of the edifice, two aisles on each side, two transepts or cross aisles, and two towers at the west end. The prevailing style it characterises in the earlier features of the cathedral is the early Romanesque or Byzantine, while in the later additions the style which prevailed towards the middle of the fifteenth century, called the third pointed, is chiefly perceptible. Basle Cathedral possesses an advantage which distinguishes it from most other continental churches, namely, that of being complete; and though chiefly built in a transitional period, its leading features harmonise with each other, and form a whole of surpassing beauty. Mr. Lechmere then proceeded to a minute description of the west front, the towers, and their details, the north porch, and other portions of the buildings, and concluded with some general remarks relative to the architectural character of the edifice. Mr. Portal, of Christ Church, noticed two Romanesque churches in Sicily, one at Moriani, near Palermo, and the other attached to the palace of the Viceroy. It appears that these were richly ornamented with mosaic work, composed of agates and other rich materials.

TENDERS.

TENDERS, opened in the presence of the parties, for building a house at Knightsbridge for Mr. Phillips; Mr. Beeston, architect.

Todd	£2,150
S. Bird	2,110
Burgess	2,105
King	2,090
Dickson (accepted)	2,027

For the new Wesleyan Chapel, opened on the 15th inst: Mr. J. Simpson, of Leeds, Architect.

Lonsdale, Nottingham	£1,611
Pocklington, Boston	1,590
Jackson, Newark	1,576
Pilkington, Bowen	1,575
Baker, Sleaford (accepted)..	1,500

TO CORRESPONDENTS.

"*J. and T.*"—We shall be happy to make use of the sketch sent, and to see any others with which we may be favoured.

"*J. J.*" (Stamford-street.)—We are obliged, but have not time.

"*An Artisan,*" (Cumberland).—The cause of smoky chimneys is so various that we cannot venture to suggest a cure for one we have not seen.

"*P. D.*"—We will call.

Received—"Zero." "Reader from the beginning." "M. P." "Scribe." "Wood's Edition of the Songs of Scotland," edited by G. F. Graham. Nos. VIII. and IX. (Novello, Dean-street.) &c.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent Garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

	£.	s.	d.
For Sixty Words or less.....	0	5	0
Every additional Thirty Words.....	0	1	0
One Column	2	2	0
One entire Page.....	6	6	0

For a series of advertisements above 5*s.* a reduction will be made.

ADVERTISEMENTS.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton-garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above office.

By the Court,
STABLE and LUSH, Clerks.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that, by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chap. 70 (local and personal), intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," it is enacted (sec. 4), that after the passing of that Act (2 July, 1847), it shall not be lawful to build any house (and the word "house" is thereby declared to comprise every species of building) within the limits of any level division or district formed, or thereafter formed, within the limits of the said Commission, unless a sewer to carry off the drainage thereof be first constructed to the satisfaction of the Commissioners of Sewers, of such material, of such size, at such level, and with such fall, as they shall direct, which sewer shall lead to and communicate with such other sewer as the Commissioners shall direct; provided that, if there shall be already a sewer sufficiently near, in the judgment of the Commissioners, to any such premises, then a drain shall be made to lead from such house into such existing sewer: and it is thereby declared that the expense of building such sewer or drain shall in all cases be borne by the owner of such house, unless the Commissioners shall think that a portion of the expense of the sewer (but in no case a drain) should be borne by the level in which such sewer shall be situate: And further it is by the said Act enacted, that if any person shall proceed to build any house in contravention of the said provisions, the Commissioners are authorized to punish him, and any person employed by him, by fine, amercement, or otherwise, as in the said Act is directed; but it is thereby provided that no person shall be required to expend a greater sum for such works than after the rate of 20*s.* per foot according to the extent of his frontage, and that any house wholly unconnected with any public sewer, and at a distance of not less than 200 feet from any public road or other house, shall not be liable to make such sewer or drain, unless such sewer or drain shall be required by the presentment of a jury: And further take notice, that the said Commissioners of Sewers hereby strictly require all persons to comply with the provisions of the said Act, and with this view persons interested are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested forty-eight hours at least before they shall so attend at the said office to send, by post or otherwise, to the Surveyor of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

BUILDERS' BENEVOLENT INSTITUTION, Freemasons' Tavern, Great Queen-street, Lincoln's-inn Fields, for the Benefit of Decayed Masters; and also to afford Relief in case of Accident to their Workmen.

PRESIDENT.
Hugh Biers, Esq., Carlton Villas, Edgware-road.

VICE-PRESIDENTS.
S. M. Peto, Esq., M.P., Great George-street, Westminster.
Thos. Grissell, Esq., F.S.A., Lambeth.
Stephen Bird, Esq., Kensington.
William Herbert, Esq., Clapham-common.
John Vale, Esq., Devonshire-place, Edgware-road.

TRUSTEES.
William Cubitt, Esq., M.P. | Stephen Bird, Esq.,
Hugh Biers, Esq. | George Spencer Smith, Esq.

TREASURER.—Mr. George Bird, 38, Edgware-road.

BANKERS.—Sir Samuel Scott, Bart., and Co., 1, Cavendish-square.

SECRETARY.—Mr. William Grubb.

HON. SOLICITORS.—Jaques, Edwards, Jaques, and Layton, 8, Ely-place, Holborn.

The Managing Committee have great pleasure in announcing that the Charity is progressing most satisfactorily, the support they are daily receiving is even much beyond their expectations; and the additional Names, with the liberal Donations and Subscriptions appended, are highly gratifying. They beg to intimate they have appointed Mr. Edward Herbert, 42, Crawford-street, Marylebone, and Charles Jackson, 3, Paradise-terrace, Holloway, Collectors to the Institution. Subscriptions will be thankfully received by the Treasurer, the Bankers, and the Collectors.

The Rules and Regulations will be sent on application, and a List of the Patrons of the Institution will shortly be printed.

Offices, Poland House, Broad-street, Golden-square, where all communications are requested to be sent.—Attendance, Mondays and Thursdays, from 10 to 4.

SOCIETY for the ENCOURAGEMENT of ARTS and MANUFACTURES, &c.

H. R. H. PRINCE ALBERT, F.R.S., D.C.L., President.

The Ninety-Fourth Session will commence on WEDNESDAY EVENING, the 10th instant, when the Royal Charter will be laid on the table, the Address of the Council will be presented, and communications relating to Arts and Manufactures will be read.

The LIST of PREMIUMS, offered for this Session, for subjects in FINE ARTS, MANUFACTURES, MECHANICS, CHEMISTRY, and AGRICULTURE, has been issued, and may be had at the Society's House (if by post, inclosing a stamp).

The ANNUAL EXHIBITION of Select Specimens in the Decorative Arts and Manufactures, including Works in Glass, China, Earthenware, Mosaics, Marbles, Carved Wood, Ornamental Iron and Brass Work, &c. &c., will be opened in the Society's Large Hall in the beginning of March; and MANUFACTURERS, ARTISTS, and DESIGNERS, are requested to send in their Works on the 5th of February.

The FIRST VOLUME of a New Series of TRANSACTIONS of the SOCIETY, with numerous Engravings and Coloured Plates, is nearly ready for delivery to Members.

The EXHIBITION of the WORKS of WM. MULREADY, Esq., R.A., for the Promotion of a NATIONAL GALLERY of BRITISH ART, will take place in June.

All Letters and Communications to be addressed (pre-paid) to the Secretary of the Society of Arts, at the Society's House, John-street, Adelphi.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

LONDON and PROVINCIAL JOINT-STOCK LIFE INSURANCE COMPANY.—The Directors invite the Public generally, also Building Societies and Borrowers, through them or from other parties, to examine the peculiar system and striking advantages offered by this Office.

Every description of LIFE ASSURANCE, INVESTMENT, and LOAN Business transacted. LOW RATES of PREMIUM, and THREE-FOURTHS of PROFITS divided.—For Prospectuses, &c. apply to JOHN MASSON, Secretary.

Offices, No. 39, Nicholas-lane, Lombard-street

MORTGAGE AND ANNUITY OFFICE, No. 123, CHANCERY-LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to Mr. BRAY, surveyor, at the offices as above.

N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.